DOCUMENT RESUME

ED 289 971 CE 048 909

TITLE	Employee Involvement: The Competitive Edge. Transactions of the IAQC Annual Conference and Resource Mart (9th, New Orleans, Louisiana, April 6-9, 1987).
INSTITUTION	Association for Quality and Participation, Cincinnati, OH.
PUB DATE	Apr 87
NOTE	379p.
PUB TYPE	Collected Works - Conference Proceedings (021) -- Reports - Research/Technical (143) -- Reports - Descriptive (141)
EDRS PRICE	MF01/PC16 Plus Postage.
DESCRIPTORS	Adult Education; Consultation Programs; *Employer Employee Relationship; Organizational Development; Participative Decision Making; *Quality Circles; Quality Control

ABSTRACT

Among the 96 papers presented at this conference are the following: "Team Building Techniques that Get Results" (Berg); "The Subtleties of Communication in Small Group Meetings" (Henry); "Feedback--Its Role in Team Building" (Lucas); "Group Dynamics--Success through Interaction" (Manning, Johnson); "The Able-Bodied Handicapped: Bridging the Gap" (Ranieri, Stephenson); "Customer-Driven Quality Management Program" (Abita et al.); "Quality Circles in a Data Processing Environment" (Evans); "New Experiences in Managing Conflict" (Greene); "Directed Quality Circles" (Jones); "Creativity" (Lemm); "Intuition" (Letize); "Work Analysis Approach to Problem Identification" (LoBue); "Competitive Edge Career Pathing" (Schaffer); "Creative Approach to Facilitator Development" (Swain et al.); "Steering Committees" (Donovan); "Hospital Pharmacy Quality Circle Educational Video for Nursing Personnel" (Forbidussi et al.); "Group Facilitators" (Saragovitz, Slevin); "Quality Circles, JIT, Deming Users, Juran Teams: The Link" (Amsden, Amsden); "Mainstreaming Quality Circles into the Corporate Culture" (Holmes); "Making (J)IT Work" (Jacobs, Ruddy); "Middle Management: Formula for Commitment" (Jones, Rhodes); "How to Get Organization Support" (Kaplan, Hara); "Hand in Hand--Expanding Your Employee Involvement While Increasing Management Support" (Moore, Wentworth); "Successful Integration of the Quality Circle Process with Task Forces at Los Alamos" (Ostenak); "First-Line Supervisors as Facilitators" (Pomraning, Dunnington); "Middle Manager Involvement in Employee Involvement" (Thompson); "Systems Refinement Teams: Organizational Adaptations to Quality Circles at Martin Marietta Michoud Aerospace" (Cozier); "The Evolution of Quality Circles into a Total Quality Improvement Strategy" (Mugno); "Can Quality Circles and Quality Improvement Processes Function Together to Enhance Employee Involvement?" (Robinson, McDonough); "High Touch in a High Tech Environment" (Schneider, Matt); "Implementing an Award-Winning Productivity Program in a White Collar Environment" (Torrence); "Fostering Creativity: A Consumer Report on Multiple Techniques" (Bostwick, Gelmini); "Evaluating the Quality Circle Activity" (Conklin); "Management Support Isn't as Critical--But Training Is!" (Honeycutt); "Measurement Is the Key: Charting Circle Success" (Peais); "Quality Circle Member Motivation" (Wiebe, Berg); "Pitfalls for the Unwary

Quality Circle Facilitator" (Feldman); "The First Meeting...More Fun and Games...Getting Groups off on the Right Track" (Propersi); "The Juggling Act: Keeping Quality Circles a Top Priority" (Schimek); "Quality Circle Services Consulting Services" (Ingle); "John Hancock and ODI" (Sullivan, Youngwirth); "Management Attitudes and Actions that Create the Optimum Participatory Environment" (Kay); "Employee Involvement at Mercury Marine" (Seyfert); "Quality Circles Behind Bars in Missouri" (Werst, Miller, Miller); "How One School District Benefits from Quality Circles" (Wilson). (YLB)

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Employee Involvement: The Competitive Edge

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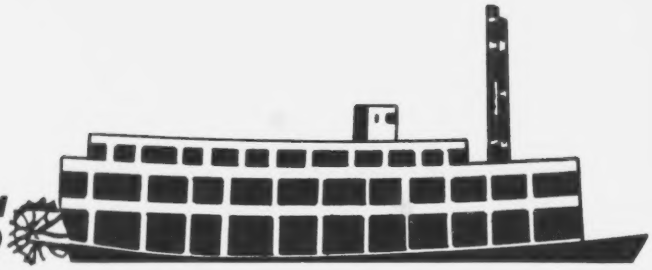

Transactions of the IAQC 9th Annual Conference and Resource Mart

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A: Quantitative Techniques

"Results You Can Count On"

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St. Vincent Infirmary, Little Rock, AR
Chester Cummins
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Gathering data is a key component to the success of quality circle efforts. Yet many people don't do a very good job collecting data on their QC program and its impact on the organization. Organizations that do collect data usually record dollars saved, solutions generated, turnover in teams, etc. That data is an excellent tool for tracking part of the QC success story. But there is another avenue of measurement that offers new insights into the growth of QC programs. It even points out areas that are strongest and those that need more attention. That data, although used for organizational diagnosis in other programs, seems to be overlooked quite often in measuring QC effectiveness.

Employee perception of the progress of the organization is a critical element in measuring program effectiveness, especially in the areas of the QC objectives. This source of information has been tapped for organizational diagnosis for years, but often is overlooked as a means for diagnosing QC impact on the organization. Not only are the perceptions of the employees that are participating important, but the perceptions of non-participating employees are just as important in determining QC success. And the comparison of the two sets of perceptions allows QC efforts to be singled out for analysis.

The perception-based program at St. Vincent was developed to accomplish the following: 1) Identify program strengths and/or weaknesses, and facilitate adjustment, 2) Justify the expenditure for the program, a particular concern in the health care system with ever-tightening resources, and 3) Develop a strong selling point for greater worker participation in the hospital. These objectives will be presented as the basis for collecting data by the perception-based method.

This presentation will focus on the development and implementation of a perception-based evaluation system at St. Vincent Infirmary. The system centers on two measurement instruments, one measuring overall performance of the program and one measuring QC meeting effectiveness. Having been operational for three years, the system has begun to pinpoint areas of strength and weakness in the QC program at St. Vincent.

St. Vincent Infirmary is a 650-bed hospital with 2,400 employees. The QC program at SVI is called "Making Things Better" (a package program by Organizational Dynamics, Inc., Boston). Initiated by a steering committee composed of 21 people from all levels in the organization, the program began with 10 MTB teams in March, 1984.

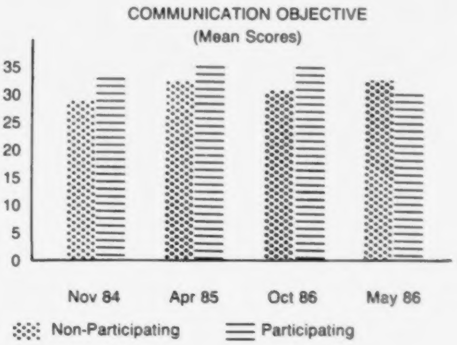
The core of the perception-based evaluation system is a survey instrument developed for St. Vincent by Dr. Paul Fitzgerald, Associate Professor, Health Sciences Administration, University of Arkansas at Little Rock. Each of the 71 questions on the survey relate directly to one of the eight objectives for the MTB program. Titled the "Hospital Progress Scale" (HPS), the survey is administered every 6 months to all participating MTB team members and an equal number of randomly selected, non-participating employees. Survey results are then recorded, charted ,and compared to determine changes in perceptions of both groups.

The HPS measures employee perceptions about the hospital's success in only those areas already targeted by the objectives of the QC program. Those objectives relate to the following areas: quality and efficiency of patient care, employee involvement in decisions affecting their work, cost effectiveness, overall communication, personal and leadership development, problem identification capabilities, environment conducive to problem prevention, and team work.

Employees are asked to rate how they feel about the way things are done in the hospital and in their work area. Each question has a rating scale from 1 (Agree Strongly) to 7 (Disagree Strongly). Examples of questions from the HPS follow:

1. This hospital is run well.
2. There are enough ways for me to voice my opinion to management.
3. Changes are explained to workers.
4. I like my job.
5. My supervisor ignores my problems on the job.
6. Very little time is wasted in my unit/department.
7. When I am at work, I feel like a part of a team.
8. The care and services given at this hospital are excellent.
9. I get a chance to suggest changes in my job.

At the initial administration of the HPS in March, 1984, the participating employees' perceptions were slightly more negative about the hospital's success than those of non-participating employees. This puzzled both Dr. Fitzgerald and the QC program staff. After some discussion and thought, it was hypothesized that this might be a natural response by employees during their first attempt at the QC process. Sort of a "Pandora's Box" was the theory we developed. After all, these employees had some real concerns regarding problems in their work areas. Why else would they volunteer for such a program as QC? Patience and perseverance proved their usual virtues, and over the past three years participating employees have become more positive than non-participating employees. The shift was gradual, but definite. Below is an example of the graph for questions relating to the communication objective: (remember the higher the score the more **negative**).



The second component of the perception-based evaluation system is the 81-question survey, also developed by Dr. Fitzgerald, called the "Group Process Scale" (GPS). Administered each six months only to MTB team members, this survey measures perceptions regarding team meetings. The GPS measures perceptions about such group dynamics as listening, open expression, participant/leader domination of meetings, level of honesty in meetings, understanding purpose of meetings, and understanding and use of problem solving skills. Each team member is also asked to rate his/her team's effectiveness in meeting each objective of the MTB program. Finally, each team member is asked to rate the effectiveness of their own team, the MTB program as a whole, their team leader, and their facilitator.

Results of the "Hospital Progress Scale" are shared with the steering committee, and provide foundation for selection of areas of increased emphasis by the committee for the coming year's MTB activities. The HPS results also become the core of an annual report to administration on the progress of the program. In addition, senior-vice presidents meet every six months for lunch with the team leaders in their areas. Progress reports and questions/answers from both groups are the main fare for these meetings. Beside keeping upper management informed of his/her teams on a first-hand basis, these luncheons are kept small to reinforce the personal and informal relationships so critical for effective participative management.

The results of the "Group Process Scale" are only shared with each team leader and their team members. The results are first discussed with each team leader in a private meeting with his/her facilitator. Then plans are made for sharing the results with the team. Generally, overheads are made with comparisons of the scores from the previous GPS and the current one.

Discussion is then lead by the leader to determine any specific questions/areas that the team feels it should actively work on improving. Many times just the discussion of the scores by team members heightens the awareness of issues that need attention, and improvement occurs as a result of the discussion.

The use of this perception-based evaluation system has provided the QC program and the management staff at St. Vincent a tool for tracking the less tangible part of organizational success. It has proven a worthwhile tool for on-going measurement of participating and non-participating employee perceptions. And most of all it allows the QC program to role model the data collection process, and show that we "practice what we preach!"

Additional information on this project can be found in the article, "Evaluating Effectiveness: Developing the Perception-Based Evaluation System at St. Vincent Infirmary," *Quality Circle Digest,* December, 1984. That article describes in detail the process of development and validation of the instruments, including interviews with employees to develop questions that clearly correlate with the objectives of the QC program, clear language for the surveys, and field testing questions for understanding. These development techniques are critical to the success of data collection of the perception-based nature, especially since it is employee perceptions that are being measured.

BIOGRAPHICAL INFORMATION

SUE COLE, QC Facilitator at St. Vincent Infirmary, Little Rock, Arkansas, was an instructor in the hospital's Education Department prior to the initiation of the Quality Circle program in 1984. Her work background includes a consultant position with a voluntary health agency, public relations, and statistical experience with Blue Cross and Blue Shield of Arkansas and Arizona, and with a private physician. This experience has given her a good conceptual base of knowledge for working with problem solving groups in health care. She is presently continuing her education in marketing and management at the University of Arkansas at Little Rock.

CHESTER CUMMINS is Director of Management Development for St. Vincent Infirmary. He has a Master of Arts degree in Interpersonal and Organizational Communications. His experience includes 16 years in the training and development field, with varied experience in management and educational consulting. He is the Coordinator of the Quality Circle program at St. Vincent, and has worked with the program from its beginning. He is also an active member of the American Society for Training and Development.

Performance Measures: One Essential Step in the Transformation of Quality Circles Into Self-Managing Teams

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Participation in quality circles teaches employees many of the skills essential to self-management. Among these, setting measurable goals, data gathering, and follow-up on solution orient circle members to measure performance. The Performance Objective Matrix (Felix and Riggs 1983) is introduced as a group performance measurement technique useful in improving the performance of QCs in the above-mentioned tasks and in providing a common language for self-managing teams to communicate their goals and results to management. Quantitative assessment of group performance to challenging goals is a prerequisite for the establishment of successful self-managing work groups.

Quality circles are changing. Many QC programs are evolving and adapting to new, specific organizational needs and environments. More and more, participative management and employee involvement processes include innovative structures like self-managing work teams, "natural" work teams, task force teams, and "problem-dump" groups, in addition to quality circles (Geber 1986; Galagan 1986; Kenrich and Van Horne 1986). Organizations that continue to operate quality circles along classic guidelines are seeking always more efficient and effective methods to conduct their business.

Whether we participate in decision making through quality circles or self-managing teams, one particular aspect of team work is demanding continuous improvement. I am speaking of group performance measures. Quality circle members have been unable, at times, to maximize and justify the success of their projects primarily due to the inability and/or unwillingness to set measurable goals, collect data, and provide quantitative follow-up to the effectiveness of their solutions. The method of group performance measurement presented below provides needed assistance in these areas of circle activity.

Self-managing groups require group performance measurement techniques even more than quality circles. In fact, it is nearly impossible to maintain an effective self-managing process without a consensus on work objectives and performance standards. Self-managing groups require a common language to communicate their achievements and performance obstacles to management. Without the intense, daily supervision of work by management, work groups must provide to their members, as well as their "internal" suppliers and customers objective feedback on goals, procedures, and results. The group must measure their performance and communicate their accomplishments to management and the rest of the organization if their efforts are to be productive.

Michael Donovan (1986:19) has probably stated the need for performance measures most clearly when he states "a good system of measures is crucial to establishing accountability, establishing goals, and creating a feedback system". The system of performance measurement must be mutually intelligible, and mutually agreeable so as to provide the common language necessary to build trust and communication between work groups and management.

We all have heard complaints from managers about the lack of results in quality circle activities. Similarly, in those organizations that are experimenting with self-managing groups, a prevalent concern is lack of direction, anarchical behavior and inability by managers to accurately judge the performance in a timely fashion. To allay these fears and criticisms, we need to include group measures of performance in all our circle training and certainly in our plans for self-management work groups.

But what type of measurement system is best suited for these purposes? How can an organization measure the performance of work teams and maintain their philosophy of employee involvement and control in work-related decisions? These were some of the questions we, at Pan Am World Services, Inc., researched prior to launching our present effort to institutionalize employee-based measures of team performance.

THE PAN AM EXPERIENCE

Pan Am World Services, Inc. functions as the Facilities Operating Services contractor at NASA's National Space Technology Laboratories, in Bay St. Louis, MS. Our work force includes engineers, craftsmen, clerical and institutional services employees. The large variety of job types required a system of measurement applicable to all and comparable between units doing significantly different work. As a contractor to NASA, we felt responsible for achieving the productivity goal mandated by the President of the United States (Executive Order 12552) requiring a measurable productivity improvement of 20% by 1992. It was clear that to meet that goal, and to continue to innovatively increase our participative management process, we needed a reliable and widely accepted system of measuring performance.

Research into the potential techniques available to gauge the performance of groups revealed certain criteria that, if met, improved the rate of success in institutionalizing such a system. Among them we discovered that the system must be understood, endorsed and conscientiously implemented by the users (i.e., the work groups). Further, the method of measurement must remain in the control of the work group. Other attributes of successful measurement programs include: clear, easily understood system that is easy to implement; one that is also clearly cost effective, timely and requiring a minimum of paperwork. The method should be equally applicable to all work groups whether engineering or custodial. One measurement system that appears to provide all these benefits, and more, is the Performance Objective Matrix (Felix and Riggs 1983; Riggs 1986). The matrix has been employed by aerospace companies such as Boeing, Martin Marietta-Michoud, and Unisys, Inc.

We were attracted to it by its promise to involve the work group to the maximum in its design and implementation, thus fitting in with our need to maintain the principles of participative management. The Performance Objective Matrix (P.O.M.) employs many of the problem solving techniques used by quality circles. The work group is asked to brainstorm potential job requirements that can be measured. Through prioritization and consensus decisioning supervisors, managers and work group members arrive at four to eight objectives that they want to measure as a partial index of their work performance. The same people reach agreement on the different importance of each criteria and assign weights to them. Next, the past performance of the work group is researched for each selected objective. In cases where the information required is not previously available, the work group develops and fills out check-sheets to establish the baselines. Once baselines are set, the matrix is filled in and is posted in the work area, ready to use.

Each month, members of the work teams collect the data and circle the appropriate number on the matrix. They then compute their monthly performance index and plot it on a trend chart. The entire process of monthly measurement takes less than 30 minutes. All indeces from work groups are forwarded to management. More importantly, after the trends become clear, the work group meets in problem solving session once a week to identify, analyze and solve performance problems surfaced in measuring with the matrix.

The effectiveness of the group's solutions is evident in the next month's measures and allows teams to refine their problem solving skills while gaining a feeling of pride and accomplishment from their results. Those work groups that achieve performance indeces double the baseline receive cash bonuses. Higher cash rewards are given to each team member when the group performs three times better than the baseline for a period of three or more months. Any improvements in performance are widely recognized by management through personal visits to work areas, by publicity in the local press, and by the presentation of congratulatory letters. Each month a plaque is awarded to the work group that scored the highest. Since the matrix is tailored to the previous performance of each work group, despite the nature of the job, craftsmen can complete against engineers and the results can be replicated and understood by all.

The process of implementation began with briefing senior management on the method and its benefits. We implemented the matrix in two areas where the supervisor volunteered to pilot the use of the P.O.M. These areas were given shirts as a reward for volunteering to implement the matrix. After three months, three additional teams joined the measurement program and now we expect approximately 20 teams competing for "Performance Leader of the Month" before the end of 1987. At present, group leaders report their measurement results once per month at the staff meeting of senior managers.

POTENTIAL OBSTACLES

Several caveats and pitfalls must be mentioned to provide guidance for people planning implementation of P.O.M. First and foremost, many people are very reluctant to be measured. This resistance is especially evident among professional workers (engineers, scientists) who feel that they should not be subjected to measures since their work is unique and hard to quantify. They fear that measures will stifle innovation and creativity. One approach we used to circumvent this opposition to being measured is to emphasize that each work group exercises total control over its data and the method for collecting it. Further, we assured all employees that the matrix would be employed as a diagnostic tool to identify performance obstacles and to resolve these issues. The group asks the questions what, where, how and why, but not who. Also comforting to the people considering the matrix was the emphasis on group performance and not individuals, removing some of the fear of retribution for poor performance. We hope that the competition fostered by the other groups, as well as the visible evidence that these matrices are not used for punishment, will motivate these workers to participate in this program of measuring objectives and their achievement.

Other potential pitfalls include limiting performance by placing a ceiling on achievement, taking fewer risks and concentrating only on those items being measured. Finally, it must be made absolutely clear that the matrix does not measure the entire job. The supervisor or work group will still need to evaluate the individuals, their attitude and performance in areas not addressed by the matrix. Similarly, the supervisor of the area, and the managers will need to reassure the work teams that the matrix will not serve to identify poor performance for doling out reprimands and punishments. Rather, the matrix is a tool for problem solving and measuring the accomplishments of the area: in essence it serves as a documentation of the excellence of performance normally assumed or intuited for any given work group.

BENEFITS

For a quality circle, the implementation of the P.O.M. serves at least three critical functions. First, it provides a ready mechanism to set measurable goals and targets for goal achievement. Secondly, the matrix serves as a data gathering tool recording baselines and monthly trends, while highlighting areas of failing performance where problem solving can be applied by the group. Lastly, the matrix functions as a tool for assessing the effectiveness of a solution. The monthly measures will testify to the increase (or decrease) in performance following the implementation of specific remedies. The matrix thus provides a reliable feedback mechanism readily visible to the circle. The problem solving activities become more focused and results are easily measured.

In organizations where the practice of employee involvement is expanding to include self-managing groups, task forces and other such mechanisms, the performance objective matrix provides many valuable benefits. Again, the focus is on measurable results and thereby work groups and managers develop a common language to discuss work activities. Evaluations based on measured performance tend to be less antagonistic, and subjective leading more often to problem solving rather than fixing the blame.

Since the work group participates in the selection of the objectives and then maintains control over their measurement, the reluctance and resistance to being measured or measuring is diffused. Whether the group decides to continue using the matrix to assess their efforts or opts for other measuring systems, members of the group will be more likely to develop a positive attitude toward work measures and will realize the validity and benefits of undergoing this type of evaluation. For senior management, the matrix provides a clear, simple and totally adaptable performance measurement system. Since each work group is measuring performance based on their individual, historical baselines and translating these various numbers into a single performance index or score, managers can assess the monthly performance of each work group quickly and efficiently. In this way, plumbers can be compared with design engineers using standard figures. The ability to compete for performance leadership on any given month fosters healthy competition between work groups that are not often viewed as comparable. Pride and motivation result from the feedback to the work group and between work groups.

The performance measures can also be translated into measures of productivity when compiled at the topmost levels of an organization. The contributions of each work unit to the organization's productivity can be readily assessed and communicated using standard terminology.

Finally, when work groups measure objectives that are not entirely under their control (for example, when craftsmen measure the impact of wrong material or inexact drawings on their performance), all units gain an appreciation of the socio-technical relationships extant in all organizations. The effect of sloppy (or good) work by one work unit on their "internal" customers and suppliers is readily visible through the matrix. Interdivisional problem solving teams can be formed to address these system obstacles, and their efforts can again be measured through matrix computations. The entire organization gains an appreciation of each group's contribution through specific goals to the attainment of the overall mission.

In summary, the Performance Objective Matrix is an exciting tool for measuring performance. It works exceptionally well in organizations practicing participative management. The matrix provides clear measurable goals and simple methods to compute the impact of refinements and the achievement of rewards. The entire organization can be positioned toward common objectives while maintaining their individuality. Each group gains an understanding of their position within the overall process of productivity and is able to assess their impact on other groups and the organization itself. The technique is "collar" blind thus fostering equality and teamwork (through competition) between often isolated and non-communicating units. The common language of performance to goals and measurement allays management concerns in work group activities while objectively rewarding and recognizing the high performance teams. Working with the matrix increases the employees' orientation toward results and provides pride, motivation and realistic feedback to the work force.

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BIOGRAPHICAL INFORMATION

Marco J. Giardino is productivity and quality coordinator for the NSTL Facilities Operating Service, Pan Am World Services. In his present position, Dr. Giardino works such programs as quality circles, performance measures, organizational surveys, and group motivation. A significant part of this work includes management and employee training. He spent four years in the Mission Success Office of Martin Marietta Michoud Aerospace where he worked with quality circles and consulted to NASA on HRD topics. Dr. Giardino received his PhD in Anthropology from Tulane University. He was born in Rome, Italy.

The Howedoin Index

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A long-standing need has existed for a measurement tool that communicates to management how to track improvements and how these improvements contribute to achieving goals that support the company's business plan.

The Howedoin Index is such a tool and shows (1) where we are - a current yield or percent defective; (2) where we're going - a realistic, achievable level of performance arrived at by concensus; and (3) where we want to be - an agreed-upon minimum level of performance.

The Howedoin Index provides a long term record of performance against a visible goal. It is a tool which converts data into information and thus provides the motivation for those involved to push the trend line in an upward direction.

The Howedoin Index is an ideal tool for quality circles, task teams, or others who need to monitor yields and area improvements. It yields a single number which is highly representative because of weighting and indexing, yet it does not require mathematical or statistical operations for determining significance.

The Howedoin Index shows where statistical process control should be applied to control variability in yields.

A MEASUREMENT TOOL WHICH MOTIVATES AND VALIDATES CIRCLE EFFORTS

Since the beginning of the Quality Circle movement in the U.S., there is considerable agreement that middle management as a group has avoided full involvement in Circle activities; and, in some cases, actually sabotaged Circle projects through nonsupport.

This attitude on the part of middle managers is understandable because they perceive the evidence being presented to them in problem investigations came about by using overly simple measurement methods.

GUNFIGHT AT THE CIRCLE Q CORRAL

This weakness becomes apparent at Circle presentations if the facts supporting the Circle suggestions are examined and questioned by a manager with an axe to grind. The results can be severely damaging to Circle members, who often respond by abandoning the project or even worse their participation in the whole Circle process. The weakness of the Circle, in relation to the power of the manager, is only real if the analysis that the Circle applied to the problem is inadequate or if the numbers presented are based on incorrect measurement techniques.

NUMBERS, NUMBERS, EVERYWHERE NUMBERS

"Numbers tend to dominate the language of engineers. We analyze, optimize and dramatize with numbers. Reputations are built on the accuracy of number generation and manipulation. Businesses are run by the numbers."

James L. Riggs, P.E.
Oregon State University

While this may be true, numbers such as hours, percentages, ratios don't have sufficient impact if not converted to dollars.

MONEY, MONEY, MONEY, MAKES THE VORLD GO ARRROUND

Is there any doubt that money is the language of management? A Circle presentation will have maximum impact when the issue of money is given full attention. When defining problems and suggesting solutions, a Circle needs to consider that most managers understand three things about money:

- How to make it
- How to spend it
- How not to lose it

Because many Circle suggestions often involve all three simultaneously, it is important that skills in measurement be developed. This improves the image of the Circle and dispels perceptions of weakness. When generation or preservation of money is the thrust, the Circle making the effort of supporting the company's business plan is likely to be supported by management at higher levels. Nonsupport by middle managers now becomes more risky and career-threatening for them if they choose to continue in their nonsupportive ways.

IF YOU DON'T MEASURE IT, YOU CAN'T MANAGE IT

Measurement is good management. Good management is good business. Where performance is measured and publicized, people tend to focus on the displayed measure and endeavor to improve the performance. Americans tend to favor efficiency and they respect things or systems that work; therefore, the inherent motivation to improve only needs to be encouraged and facilitated to yield positive results. The Howedoin Index provides each area with a score to focus on. Efforts are then directed to convince the area group that they can influence and improve upon that score; therefore, the measurement promotes excellence.

HARD NUMBERS, SOFT NUMBERS; ARE THEY HORSES OF OF THE SAME COLOR?

"But numbers can be elusive and misleading. Human behavior is particularly difficult to measure accurately. Not only do many aspects of worker performance resist quantification, but numbers assigned may not serve their intended purpose."

James Riggs, P.E.
Oregon State University

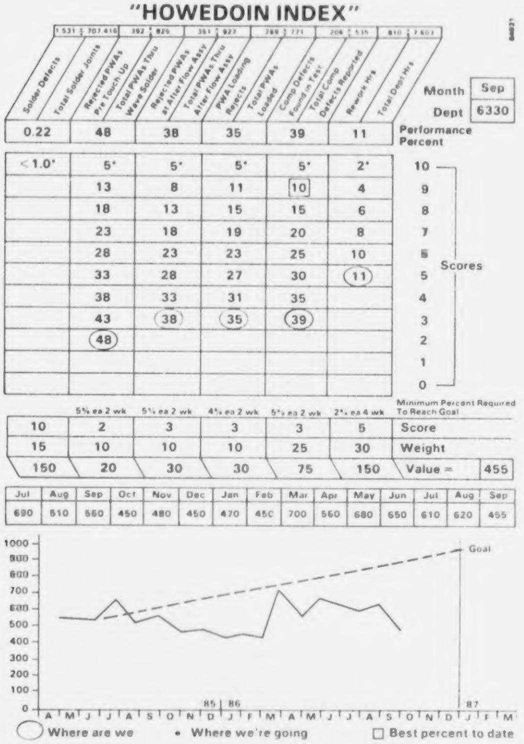
Every area or department is faced with having to use hard or soft numbers to measure performance. They need a way to convey a message with adequate impact even when things are tough to "quantify."

THE HOWEDOIN INDEX, A TOOL FOR ALL SEASONS

The technique of indexing is somewhat like the .45 Colt Peacemaker used on the western frontier. It gave every man an equal chance against an aggressor. Indexing equalizes hard and soft numbers by multiplying them with a score and weight which yields a number that represents a relative contribution to the overall performance score. Using the indexing method, the yield of an activity that can only be measured by relative value can be juxtaposed to an activity that is easily quantified.

In addition, the Howedoin Index can be constructed using hours, dollars, percentages, ratios, and other miscellaneous units.

An example of the Howedoin Index using relative cell values is shown in figure 1. The index measures a number of performance yields by calculating the percentages of defects against totals and establishing scores. Note that the base data from which percentages are taken is shown at the topmost part of the chart. Scoring begins at 3 for new measures. Incremental steps are determined by subtracting where we are from where we´re going and dividing by the number of cells to reach a score of 10. Note that some measures in figure 1 indicate performances that have not improved beyond the start point and one is below. Until corrective action is formalized and begins to take hold, this is likely to continue. The final step involves multiplying the scores by the relative weights which equal 100 and the sum is shown as the value for the month. If all categories are at a score of 10 the final value would reach 1000.



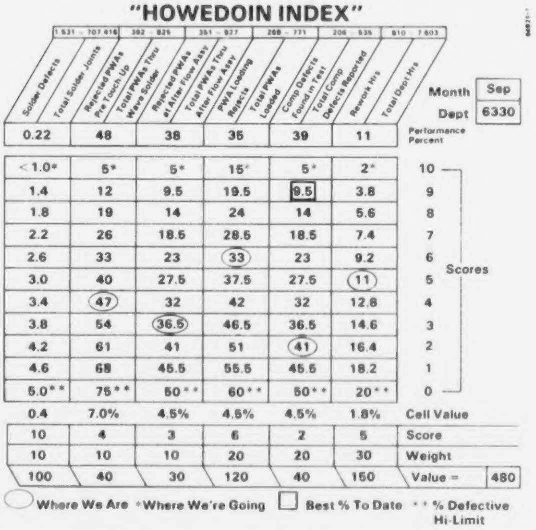
1 531 ÷ 707 416	392 ÷ 825	351 ÷ 927	269 ÷ 771	206 ÷ 535	810 ÷ 7 603	
Solder Defects / Total Solder Joints	Rejected PWAs Pre Touch Up / Total PWAs Thru Wave Solder	Rejected PWAs at After Flow Assy / Total PWAs Thru After Flow Assy	PWA Loading Rejects / Total PWAs Loaded	Comp Defects Found in Test / Total Comp Defects Reported	Rework Hrs / Total Dept Hrs	
0.22	48	38	35	39	11	Performance Percent
<1.0*	5*	5*	5*	5*	2*	10
	13	8	11	10	4	9
	18	13	15	15	6	8
	23	18	19	20	8	7
	28	23	23	25	10	6
	33	28	27	30	11	5
	38	33	31	35		4
	43	38	35	39		3
	48					2
						1
						0
	5% ea 2 wk	5% ea 2 wk	4% ea 2 wk	5% ea 2 wk	2% ea 4 wk	Minimum Percent Required To Reach Goal
10	2	3	3	3	5	Score
15	10	10	10	25	30	Weight
150	20	30	30	75	150	Value = 455

Scores: 10 to 0

Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
690	510	560	450	480	450	470	450	700	560	680	650	610	620	455

Figure 1. Howedoin Index Sample Using Relative Cell Values

The Howedoin Index using fixed cell values is illustrated in figure 2 and is the preferred method for scoring. The value to be achieved (reference cell 10) is set in the usual way. Then the highest percentage defective which is likely in each category (reference cell 0) is established. The value for each cell is then determined by subtracting the value in cell 10 from the value in cell 0, then dividing by 10. This will yield the value for each cell from 0 to 10. These values remain fixed for the term of the study, and the percentage achieved each month is indicated by circling the cell number which is closest to the percentage achieved.


"HOWEDOIN INDEX"
Month Sep
Dept 6330
Scores
Where We Are
*Where We're Going
☐ Best % To Date
** % Defective Hi-Limit

1 531 - 707 416	392 - 825	351 - 927	269 - 771	206 - 535	810 - 7 603	
Solder Defects / Total Solder Joints	Rejected PWAs Pre Touch Up / Total PWAs Thru Wave Solder	Rejected PWAs at After Flow Assy / Total PWAs Thru After Flow Assy	PWA Loading Rejects / Total PWAs Loaded	Comp Defects Found in Test / Total Comp Defects Reported	Rework Hrs / Total Dept Hrs	
0.22	48	38	35	39	11	Performance Percent
<1.0*	5*	5*	15*	5*	2*	10
1.4	12	9.5	19.5	9.5	3.8	9
1.8	19	14	24	14	5.6	8
2.2	26	18.5	28.5	18.5	7.4	7
2.6	33	23	33	23	9.2	6
3.0	40	27.5	37.5	27.5	11	5
3.4	47	32	42	32	12.8	4
3.8	54	36.5	46.5	36.5	14.6	3
4.2	61	41	51	41	16.4	2
4.6	68	45.5	55.5	45.5	18.2	1
5.0**	75**	50**	60**	50**	20**	0
0.4	7.0%	4.5%	4.5%	4.5%	1.8%	Cell Value
10	4	3	6	2	5	Score
10	10	10	20	20	30	Weight
100	40	30	120	40	150	Value = 480

Figure 2. Howedoin Index Sample Using Fixed Cell Values

MEASURING HOWEDOIN, WHY IT´S WORTH DOING

- o Enhances Circle skills
- o Helps to define the mission
- o Focuses on critical measures only
- o Provides a way to set goals
- o Shows performance trends
- o Provides diagnostic features
- o Enhances feedback and recognition
- o Supports the business plan
- o Improves competitiveness

WE´RE SOLD! HOW DO WE START?

- o Explain the Howedoin Index to Circle members and their managers
- o Review the mission of each department
- o Select performance indicators to measure each area
- o Establish where we are in our performance
- o Agree on where we want to be by some set date
- o Define where we don´t want to be minimum acceptable performance
- o Set mini goals to reach by set date
- o Set up measurement methods
- o Involve everybody
- o Construct Howedoin Index poster
- o Reach consensus on scores and weights
- o Plot available numbers
- o Stress quality, cost effectiveness, timeliness, etc.
- o Set up improvement activity
- o Promote awareness - improvement - maintenance
- o Provide constant feedback

MONEY-CONSCIOUS CIRCLES - FULL PARTNERS IN MANAGEMENT

A Quality Circle improves its credibility when presenting various suggestions for improvement by using the Howedoin Index. Consistent use of this technique promotes a financially-based approach to existing Circle skills and encourages acceptance by management. When Circles reach full maturity in their skills to speak the language of management, they are regarded as full partners in the improvement and participative process. This measurement emphasis should be considered a prerequisite to establishing Quality Circles as a "way of life" in all of our institutions and businesses.

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BIOGRAPHICAL INFORMATION

Ronald J. Richard holds an MBA degree from Pepperdine University, Malibu, California, and is employed as a Senior Quality Engineer at Interstate Electronics, Anaheim, California, where he performs statistical studies in productivity and production yields and trends.

Process Capability and Capability Indices

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The concept of standard deviation is developed and a simple example presented. A "normal distribution" curve is defined and expressed in standard deviation units. The Engineering Tolerance and Natural Tolerance are defined. Using these values, three conditions are described which tells if a process is capable of meeting specifications. The P.C. Ratio, the Capability Index (C_p), and the Capability Index Adjusted for the Mean (C_{pk}), are defined. Industrial process data is then used to calculate the three capability indicies and the results discussed.

Before getting into the discussion of Process Capability and the Capability Indices, it is necessary to understand the meaning of "Standard Deviation" as applied to variable data. Suppose we go to our process and take 25 readings of some variable at evenly spaced time periods. The average, X-bar, can be calculated by adding all 25 values and dividing by 25. Figure 1. shows the average line, X-bar, and the first four values of the variable being measured.

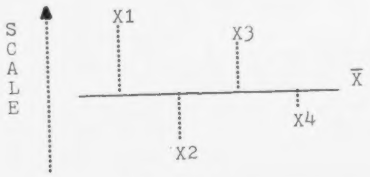


Figure 1.

Also, note the scale line showing an increase as it moves up the page. The remaining 21 values could be plotted in a like manner around the average line, if we wanted to do that. Now, we would like to know what is the average distance of all 25 points from the X-bar line. One way we might think of calculating this average is to simply subtract the X-bar value from every X value and then add the results. To test this idea, look at the first reading, X1, in relation to the position on the scale and we see that since it has a larger value than the X-bar value, we will get a positive answer when we subtract the X-bar value. Now, look at the second reading, X2. Since the X2 value on the scale is smaller than the X-bar value, when we subtract the X-bar value, we will get a negative answer. Then, if we continue to subtract the X-bar value from the remaining 23 values and add all twenty five numbers, we will get "zero" for the sum. So, that idea didn't work.

However, if you remember from your high school algebra, a negative number multiplied by a negative number gives a positive answer. So, all we have to do is to subtract the average, X-bar, from every X value, and square the answer. Then, we can add all the positive values and divide by the total number (N) of X values to get the VARIANCE, as shown by the following:

$$\text{VARIANCE} = \frac{\sum (X - \bar{X})^2}{N}$$

where $\sum$ means "to add"

If the square root of the VARIANCE is taken, the STANDARD DEVIATION can be expressed as:

$$\underset{\text{(for population)}}{\text{STANDARD DEVIATION}} = \sqrt{\frac{\sum (X - \bar{X})^2}{N}}$$

or,

$$\underset{\text{(for sample)}}{\text{STANDARD DEVIATION}} = \sqrt{\frac{\sum (X - \bar{X})^2}{N - 1}}$$

The first equation is for the Standard Deviation (σ) for the population (whole universe), and the second Standard Deviation (σ') is for a sample from the universe.

As an example, consider the following X values, 6, 5, 8, 7, 9, and 10.

	X	$X - \bar{X}$	$(X - \bar{X})^2$
	6	-1.5	2.25
	5	-2.5	6.25
	8	0.5	0.25
	7	-0.5	0.25
	9	1.5	2.25
	10	2.5	6.25
Sum	45		17.50

Average ($\bar{X}$) = 7.5

The VARIANCE is defined as: $\frac{17.5}{6} = 2.92$

And then, the Standard Deviation (σ') for the six values is given as follows:

$$\text{STANDARD DEVIATION } (\sigma') = \sqrt{\frac{17.5}{6 - 1}} = 1.87$$

This is the average distance of the six values from the average ($\bar{X}$) of 7.5.

Now, lets turn our attention to what is described as a "Normal Distribution" curve. Figure 2. shows the curve, having one peak with the average ($\bar{X}$) at the center of the peak.

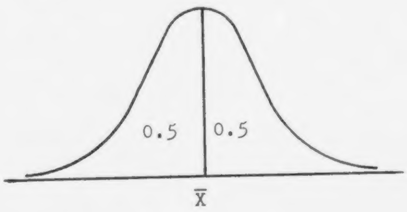


Figure 2.

By definition, the area under the curve is 1.0, making each half equal to 0.5. If we multiply by 100, we than have 50% on one side of the average ($\overline{X}$), and 50% on the other. The normal distribution curve can then be expressed in standard deviations units as shown in Figure 3.

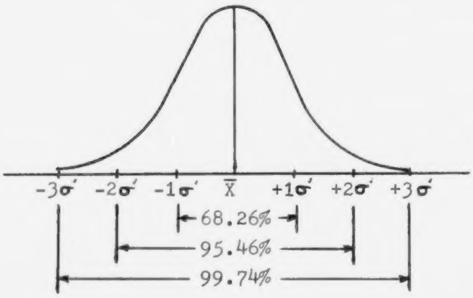


Figure 3.

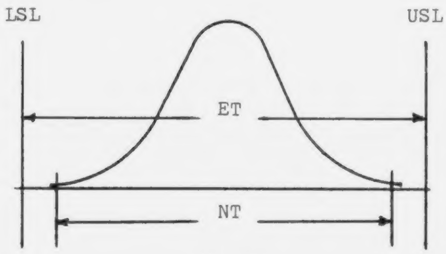
From Figure 3., it can be seen that 68.26% of all the values will fall under the curve in the area defined by the average ($\overline{X}$) $\pm 1\sigma'$. Likewise, 95.46% of the values will fall in the area defined by the average ($\overline{X}$) $\pm 2\sigma'$, and 99.74% of the values will fall in the area defined by the average ($\overline{X}$) $\pm 3\sigma'$. These natural boundaries ($\overline{X} \pm 3\sigma'$) then define the term "NATURAL TOLERANCE" for any process and is abbreviated NT. Another way to express the NATURAL TOLERANCE is: $6\sigma'$.

Product specifications describe the limits of some measurable characteristic of a product for it to be classed as "good" or "on-specification." Most often, there is an upper specification limit (USL) and a lower specification limit (LSL) to define the range in which the measured characteristic must fall to meet specifications. Subtracting the lower specification limit (LSL) from the upper specification limit (USL) defines the Engineering Tolerance, abbreviated ET.

$$ET = USL - LSL$$

Basically, every process falls into one of three different conditions:

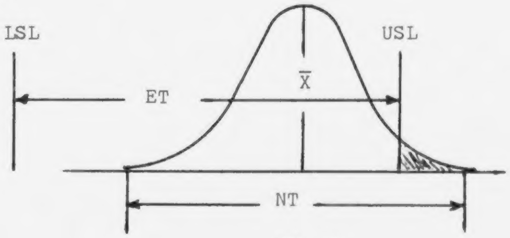
1. The Natural Tolerance is less than the Engineering Tolerance and the process is capable of meeting specifications, depending on the location of the process average. Figure 4. shows the condition where the process is capable of meeting specifications and _is_ meeting specifications.



NT < ET

Figure 4.

Figure 5. shows the condition where the process is capable of meeting specifications (NT < ET) but it is _not_ meeting specifications because of the location of the process average, $\overline{X}$.



NT ET

Figure 5.

2. A second condition that a process can show is when the Natural Tolerance equals the Engineering Tolerance, NT = ET, and the process is capable of meeting specifications. Figure 6 shows this condition.

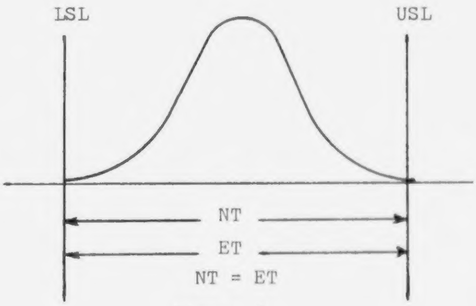
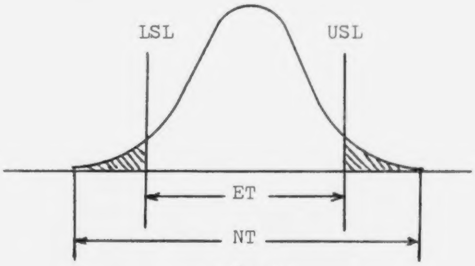


Figure 6.

3. The third condition that a process can show is when the Natural Tolerance is greater than the Engineering Tolerance, NT > ET, and the process is _not_ capable of meeting specifications. Figure 7 shows this condition.



NT > ET

Figure 7.

In order to show if a process is capable of meeting specifications, and the location of the distribution with regard to the specification limits, three different capability indicies have been developed.

1. PROCESS CAPABILITY RATIO, abbreviated P. C. Ratio, is defined as follows:

$$\text{P.C. Ratio} = \frac{NT}{ET} = \frac{6\sigma'}{USL - LSL}$$

If the calculated value is larger than 1.0, then the process is not capable of meeting specifications. Another way to express the P. C. Ratio is to show the calculated value as a percentage by multiplying by 100:

$$\text{P.C. Ratio (\%)} = \frac{\text{NT x 100}}{\text{ET}} = \frac{6\sigma' \text{ x } 100}{\text{USL - LSL}}$$

Table 1 presents data for four Machine Shop operations and four Chemical Processes. Note that examples 1, 2, 4, 7, & 8 are capable of meeting specifications. Also, examples 3, 5, & 6 are not capable of meeting specifications.

2. The second index to be considered is named the CAPABILITY INDEX, abbreviated C_p, and it is defined as follows:

$$\text{CAPABILITY INDEX} = C_p = \frac{\text{USL - LSL}}{6\sigma'}$$

Any process can be rated for the possibility of producing production within the specification limits by determining the capability index, C_p. Processes can be rated as follows:

C_p Value	Rating for the Process
2.00 or	EXCELLENT - Goal to strive for
1.34-1.99	GOOD - Still work at improving process
1.00-1.33	MINIMUM ACCEPTABLE- Process must be improved.
1.00	POOR - Process is not capable of meeting specifications.

Table 2 presents Capability Index data for four Machine Shop operations and four Chemical Processes. Note that C_p values for examples 1, 2, 4, 7, & 8 are larger than 1.0, making those processes capable of meeting specifications if the process average is located so as to place the distribution between the two specification limits.

Figure 8, for example 5 from Table 2, shows the location of the Natural Tolerance, as centered by the average, $\bar{X}$, and the upper and lower specification limits. Notice the Natural Tolerance of 12.48 and how it extends above the upper specification limit when $\bar{X}+3\sigma'$ boundry is plotted as 53.69. This process has a Cp of 0.80 and is not capable of meeting specifications.

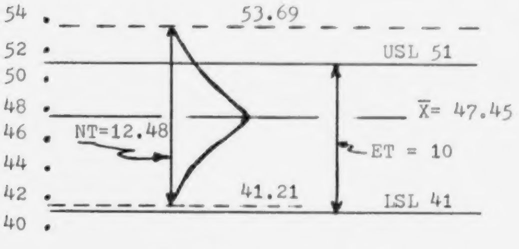


Figure 8. C_p = 0.80

Figure 9, for example 8 from Table 2 shows the Natural Tolerance ($6\sigma'$) lying between the upper and lower specification limits, with boundries of 35.994 ($\bar{X} + 3\sigma'$) and 32.886 ($\bar{X} - 3\sigma'$), making the process capable of meeting specifications and is meeting specifications.

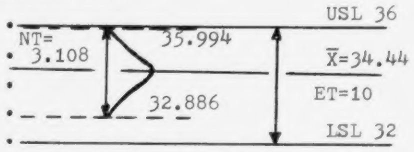


Figure 9. C_p = 1.29

3. The CAPABILITY INDEX ADJUSTED FOR THE MEAN is the third method for describing process capability and it is abbreviated C_{pk}. The P.C.Ratio and the CAPABILITY INDEX, as presented in sections 1 & 2 above, tell numerically if a process is capable of meeting specifications. They do not tell if a process is meeting specifications. If the natural boundaries ($\bar{X} \pm 3\sigma'$) are calculated and compared to the specification limits, then it will be known whether or not the process is meeting specifications. The C_{pk} procedure looks at the distance from the distribution average to the upper specification limit and the distance from the distribution average to the lower specification and divides each value by $3\sigma'$ to give C_{pk} values. By definition, the smallest numerical value is chosen as the C_{pk} value. C_{pk} calculations are made as follows:

$$C_{pk} = \frac{\text{USL} - \bar{X}}{3\sigma'}$$

OR

$$C_{pk} = \frac{\bar{X} - \text{LSL}}{3\sigma'}$$

and the smaller of the two calculated values taken as the C_{pk}.

Table 3 presents C_{pk} values for four Machine Shop operations and four Chemical Processes. The two calculated values of the C_{pk} are given in the last two columns to the right. Only the last column is the true C_{pk}. Note that only examples 7 and 8 have C_{pk} values larger than 1.0.

Figure 10 shows the location of the distribution curve with respect to the specification limits and the values used to calculate the C_{pk} for example 5 from Table 3.

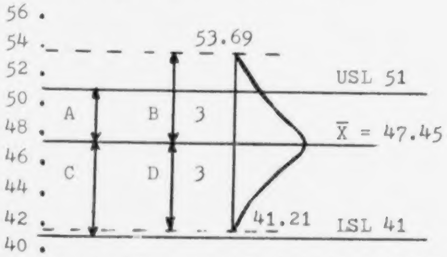


Figure 10. C_{pk} for Example 5, Table 3

A= 3.55 B= 6.24 C= 6.45 D= 6.24

TABLE 1.

PROCESS CAPABILITY RATIO (P.C. RATIO)

	PROCESS	(avg) $\overline{X}$	USL	LSL	STD.DEV.	P.C.RATIO	
						VALUE	%
1.	MACHINE PROCESS	3.4783"	3.4800"	3.4760"	0.00061"	0.915	91.5
2.	MACHINE PROCESS	1.4088"	1.4220"	1.4370"	0.00074"	0.888	88.8
3.	MACHINE PROCESS	1.4978"	1.4990"	1.4970"	0.00048"	1.44	144
4.	MACHINE PROCESS	6.1380"	6.1400"	6.1250"	0.00198"	0.792	79.2
5.	CHEMICAL PROCESS	47.45	51	41	2.08	1.248	124.8
6.	CHEMICAL PROCESS	0.545	1.3	0	0.22	1.015	101.5
7.	CHEMCIAL PROCESS	0.080	0.09	0.07	0.0030	0.90	90.0
8.	CHEMICAL PROCESS	34.44	36	32	0.518	0.777	77.7

TABLE 2.

CAPABILITY INDEX, C_p

						C_p
1.	MACHINE PROCESS	3.4783"	3.4800"	3.4760"	0.00061"	1.093
2.	MACHINE PROCESS	1.4408"	1.4220"	1.4370"	0.00074"	1.126
3.	MACHINE PROCESS	1.4978"	1.4990"	1.4970"	0.00048"	0.694
4.	MACHINE PROCESS	6.1380"	6.1400"	6.1250"	0.00198"	1.263
5.	CHEMICAL PROCESS	47.45	51	41	2.08	0.80
6.	CHEMICAL PROCESS	0.545	1.3	0	0.22	0.98
7.	CHEMICAL PROCESS	0.080	0.09	0.07	0.0030	1.11
8.	CHEMICAL PROCESS	34.44	36	32	0.518	1.29

(TABLE 3.

CAPABILITY INDEX (C_{pk}) ADJUSTED FOR THE MEAN

						C_{pk}	
						MAX	MIN
1.	MACHINE PROCESS	3.4783"	3.4800"	3.4760"	0.00061"	1.257	0.929
2.	MACHINE PROCESS	1.4408"	1.4420"	1.4370"	0.00074"	1.712	0.541
3.	MACHINE PROCESS	1.4978"	1.4990"	1.4970"	0.00048"	0.883	0.556
4.	MACHINE PROCESS	6.1380"	6.1400"	6.1250"	0.00198"	2.188	0.337
5.	CHEMICAL PROCESS	47.45	51	41	2.08	1.034	0.569
6.	CHEMICAL PROCESS	0.543	1.3	0	0.22	1.144	0.826
7.	CHEMICAL PROCESS	0.080	0.09	0.07	0.003	1.111	1.111
8.	CHEMICAL PROCESS	34.44	36	32	0.518	1.570	1.004

Referring to Figure 10, the C_{pk} is going to be the minimum value from the following calculations:

C_{pk} = A/B or C/D

Since A/B < C/D, the C_{pk} = 3.55/6.24 = 0.569

The C_{pk} value of 0.569 indicates the process variation to be too large and needs to be reduced to meet specifications. Also, the distribution needs to be centered at the midpoint, 46, to provide a larger C_{pk} value.

Figure 11 shows the location of the distribution curve and its relationship with the specification limits for another chemical process, example 8 from Table 3. The C_{pk} value of 1.004 indicates the process distribution curve lies between the specification limits and is meeting specifications.

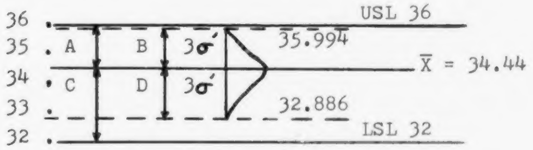


Figure 11. C_{pk} for Example 8, Table 3

A = 1.56 B = 1.554 C = 2.44 D = 1.554

C_{pk} = A/B or C/D, whichever is the smaller of the two values.

Since A/B < C/D, the C_{pk} = 1.56/1.554 = 1.004

Some companies have announced to their suppliers that by 1987, their (suppliers) processes must operate with a C_{pk} of 2.00 or greater, for them to continue as suppliers. In order to achieve this goal, process variations must be reduced and the process averages centered between the specification limits. For some processes, this may be extremely difficult to accomplish.

CONCLUSIONS

Process Capability Indices can be used to tell whether or not a process is capable of meeting specifications and if it is meeting specifications.

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BIOGRAPHICAL INFORMATION -

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B: Group Process Skills

Team Building Techniques That Get Results

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Organizations of the future will require the enthusiastic efforts of competent, committed work teams. Productive team work fosters the synergy and creativity that are needed to enable companies to respond effectively to the rapidly-changing demands of the marketplace. This session will focus upon practical, proven techniques for developing the commitment and satisfaction that are essential to the success of employee involvement teams.

"People acting together as a group can
accomplish things which no individual acting
alone could ever hope to bring about."
-- Frankin D. Roosevelt

Introduction

It is becoming increasingly evident that the future success of our organizations will depend to a large extent upon their ability to create cohesive teams, in which members enhance, rather that impede, each other's ideas and efforts. This article will discuss five necessary characteristics for building and maintaining productive teams.

Characteristics of Effective Teams

1. Commitment to common goal

Although knowledge of a systematic problem-solving process and techniques is will aid in identifying goals and in channeling team energy in a common direction, the success or failure of work teams may depend more upon member attitudes than upon member knowledge and abilities. Many teams do not achieve their full potential because there is not enough attention paid to developing an atmosphere where people feel confident and are motivated to work toward team goals. Self-esteem, recognition for team efforts, a sense of control or influence, and a feeling of being involved in meaningful, relevant activities are keys to effective team performance. These conditions are best accomplished in teams where all members are treated as equals and share both the responsiblility and the credit for team accomplishments.

2. Trust

In the long run, team success will depend upon the willingness of members to contribute their ideas, energy and time. To decide to make this commitment requires trust and the belief that other members will not only value one's own ideas, but also will accept equal responsibility for contributing their ideas. Trust does not automatically appear when a team is formed; it develops gradually over time, as members build a history of keeping small commitments to each other. The choice to trust a person or a group of people ultimately requires the belief that the decision will lead to more positive than negative consequences. Feelings of trust increase in a supportive atmosphere, where there is mutual understanding and acceptance of individual differences and encouragement of risk-taking and mistakes. The underlying aim of increasing trust is to promote idea-sharing, cooperation and task accomplishment. High trust levels increase the probability that all members will listen to each other and use individual talents and knowledge to the fullest capacity.

3. Open Communication

The most important, universally identified ingredient for team success is effective communication. Team members should be educated about the value of open, direct and honest communication and particularly about the importance of listening to each others ideas. Studies show that the average person actually hears and understands only about 25 percent of what is being said to him/her. The inability or unwillingness to listen to other people's ideas can greatly decrease team effectiveness. Members who do not feel that their ideas are being heard and understood soon stop sharing their opinions, thus losing the biggest advantage of working in teams: having a diversity of experience and ideas to apply to any particular problem/improvement area.

4. Conflict Management System

"If two people always agree, one of
them is unecessary." - Robert Frost

Most work teams do not do enough to encourage the open expression of disagreement that is essential to problem-solving and teamwork effectiveness. Other things being equal, you will get more creative and lasting solutions to problems by involving as many different viewpoints as you can. The value of diverse ideas lies not so much in their "correctness"; many ideas that will never be used as stated spark questioning and thoughts that lead to creative and workable improvements. Other potential benefits of open disagreement include: clarification and greater understanding of ideas, more involvement and stronger working relationships in the team and less liklihood of acting out negative feelings indirectly, such as being absent from team meetings or "forgetting" to complete assigned tasks. Well-managed conflict should enhance team productivity, while preserving cooperative relationships among of team members.

5. Ongoing Assessment

Many improvement teams that fail do so because they concentrate all of their time and energy on the problem-solving tasks and do not pay enough attention to the feelings members have about their participation and contributions. The most productive teams take time out occasionally from the content (problem being discussed) to focus on the group process (how the team is working together). These periodic assessments can be formal or informal, written or verbal, short or long. They should be designed to collect only information that can be used help team identify how specific behaviors are affecting the quality of their teamwork. This knowledge will allow them to make changes before it is too late to preserve team effectiveness. It is rare for any team to proceed without problems; establishing a norm of confronting these problems openly and welcoming them as opportunities to improve team functioning will greatly enhance team effectiveness and longevity.

Conclusion

Knowledge and skills alone are not sufficient to ensure the continuing success of employee involvement teams. Commitment, trust, communication, conflict management and on-going process assessment are essential for developing an environment that fosters team cohesiveness, cooperation and creativity.

BIOGRAPHICAL INFORMATION

Deanna H. Berg, Ed.D., is an accomplished trainer and professional speaker who serves as a consultant to industry leaders in a wide variety of industries. She is currently Vice President of Avatar International Inc., an Atlanta-based consulting firm, which specializes in human resource development and quality improvement services.

COPING WITH COMPLACENCY: The "If It Ain't Broke, Don't Fix It" Syndrome And How To Deal With It

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Does this sound familiar? "We don't need a formal involvement program." "E.I. programs are good for employees, but as a manager, there's nothing in it for me." "We're just fine, but we don't want to work with them. They're impossible." "Problems? What problems? We don't have any problems." This presentation will suggest practical strategies and techniques for coping with such apparent complacency.

COMPLACENCY: A GROUP REACTION TO THREAT?

Almost everyone has heard the story of a company teetering on the brink of financial collapse, that has done a miraculous turn around, largely as a result of the institution of a dynamic employee involvement or Quality Circle program. Many such cases have been documented, but, as employee involvement becomes an increasingly popular management tool, these are the exception, rather than the rule. At the moment, it is more typical for a Quality Circle program to be set up in a fairly stable organization, largely on the initiative of one or two far sighted managers who see it as a means of gaining the competitive edge. The dynamics of introducing a formal Quality Circle program into a traditional, hierarchical, but healthy organization, differs somewhat from that involved when the organization perceives itself to be under crisis. In a crisis situation, change is a matter of survival. Where survival is not an issue, change does not seem so necessary.

Yet changing the way we do business is the motivating force behind the employee involvement movement. Quality Circle programs challenge the status quo because they are based on the assumption that "We can do things better than we are doing them now." Groups in the organization may perceive implicit criticism behind the motivation to establish Quality Circles and react to it as to a threat. In this instance, "threat" can be understood in the biological sense of being an environmental event that raises the possibility of having negative or harmful consequences for the entity involved. This is far different from a situation of actual crisis, where the negative or harmful consequences seem to go beyond mere possibility to virtual certainty. "Threat", and indeed, "crisis", are in the eye of the beholder, in that they are relative terms having much to do with how situations are perceived. Nonetheless, people tend to behave somewhat differently when they see themselves under threat, than when they see themselves to be in a crisis.

So, too, with groups; and an understanding of the behavior of groups that feel threatened can prove invaluable to a facilitator trying to put together a Quality Circle program. Organizations are amalgams of groups with varying authority to make decisions on a number of matters, depending on their place in the whole. Each individual has primary and referent membership within many groups in the organization by virtue of his/her position there.[1] By choosing as its focus, the basic work group, Quality Circle theory recognizes the power of those groups to improve productivity through collective problem solving and decision making. Productivity problems, as they arise in an organization, belong, not to one person, but to a group of people. Conversely, solutions to those problems demand forming consensus and changing group norms by the people who share the problem. The Quality Circle facilitator's task is to provide groups with the skills to work through their problems as they arise. But in starting up a Quality Circle program, the facilitator should be aware that training is necessary, not only for employee work groups who wish to form circles, but for other groups, both reference and primary, within the organization whose goodwill is necessary for the program to flourish. These are the first line supervisors, and middle and upper managers who may not work together in the same way as employees on the floor do, but who share expectations that exert a powerful influence on their individual behavior and on corporate culture generally. Persuading them to support Quality Circles is not merely a matter of selling key individuals on the idea; it means engineering a shift of group norms toward participation. For example, an individual supervisor could be personally disposed to participation management techniques, but would probably fail to provide any real support to a facilitator trying to promote participation in the face of united opposition (or even apathy, for that matter) from other supervisors. Even upper level managers cannot, by the exercise of power alone, make participation a way of life in an organization that resists it. So the facilitator must be prepared to adopt a group, rather than an individual perspective, and be prepared to assist in the change of group norms, not only at the level of employee Quality Circles, but throughout the organization as a whole. This means recognizing what happens when groups feel threatened, and learning how to deal with it.

In a real crisis, groups, more often than not, are willing to try anything (even Quality Circles!) to relieve the tension that arises, but where crisis does not exist, the need for change implied by the presence of Quality Circles, poses a threat in itself, and when groups are faced with a threat, there oftentimes appears to be a preference for inaction. It has been documented [2] that decision making groups reduce their flexibility under threat. Their behavior becomes more rigid, and they restrict their information processing, in that there is a reduction in the number of channels of information used and a narrowing of the field of attention. Janis [3] has described the type of "group think" that small, cohesive decision making groups can fall prey to. It is manifested by increased reliance on the group leader, pressures for uniformity within the group, group self-censorship of deviant beliefs, and exclusion of critical imput or divergent information. Some signs that group think may be at work is an overestimation of the group's power or ability; close-mindedness, and a preference for isolation; and pressures within the group to reach a quick consensus. Janis used groups of political decision makers to illustrate his thesis, but all decision making groups, no matter what the scope of their authority, can succumb to group think; especially if they are cohesive, have a history of working well together, and face the threat of having to change previously successful patterns of behavior. In a stable, comfortable organization, where behavior systems have never been seriously criticized or challenged, and the norms are ones that encourage casual discussion of issues rather than rigorous, systemic methods of problem solving, the facilitator may be faced with resistance that looks very much like complacency or smugness. Quality

Circles may be rejected on the grounds that there is no "need" for them. Thus, managers will say: "We don't need a formal employee involvement program. I always consult my people," or "Employee involvement programs are good for employees, but as a manager, there's nothing in it for me." Employees may say: "Problems? What problems? We don't have any problems - at least none that require our going through all this rigamarole for." Finally, individual circles may resist using problem solving techniques in their dealing with other groups, on the grounds that "We're just fine, but we don't want to work with them, they're impossible."

It would be rare in today's competitive environment to find any organization where such self-congratulations were warranted. Statements like the above suggest that the speakers have misperceived where the need lies. Employees and managers don't need Quality Circles to help them function as individuals; rather, the organization needs groups of managers and employees to function in these ways in order to improve productivity and efficiency. Systematic problem solving, participative techniques, consensus decision making are all tools that groups throughout the organization can use to help them make better decisions. The Quality Circle facilitator must be an advocate for the use of these tools at all levels. But how can this be accomplished in a situation where few people see the need, and employees and managers everywhere are adopting the "If it ain't broke, don't fix it" attitude?

The very worst thing a facilitator can do is to confront complacency with masses of evidence showing that complacency is unwarranted. Such tactics only breed animosity, especially when they fly in the face of what group members choose to believe. For employee involvement systems to realize their full potential in terms of increased productivity and/or quality of service, people must be brought to at least question the status quo. Rather than tell them what to think, the facilitators can set up conditions in which group think is less likely to occur. Three factors seem to be key:

1) Groups should not be allowed to isolate themselves.

2) Overly directive leadership practices should be discouraged.

3) Conditions that foster premature consensus should be eliminated.

When working in a culture in which the tendency is for small groups of people to make unilateral decisions in cliques behind closed doors, this may seem an almost impossible task. It will certainly be a difficult one. Groups are, if anything, even slower to change than individuals. However, through a series of incremental steps, the conditions that foster change can be set up; and as more and more groups come to incorporate participative practices into their retinue of behaviors, these practices will increasingly be a part of the way things are done. What follows is a list of tactics that may be used by the facilitator to encourage employee involvement as a norm. Though no one tactic will suffice, together they are powerful. Strategies for dealing with management and supervisory groups at program start up will be discussed first, and, secondly, approaches for working with employee groups, both in and out of circles, will be suggested. To use them successfully, the facilitator must exploit his/her ability to move between employee groups to the maximum.

A. Promoting the establishment of participative group norms at management level and during program start up.

(1) The Quality Circle Steering Committee

The Steering Committee, whose brief it will be to ensure the success of the Quality Circle program, should be representative of all major groups in the organization. As with Quality Circles themselves, the maximum number for effective decision making seems to be about twelve. If the organization is very large, it may be advisable to have separate Steering Committees for each division or branch, as well as a Central Steering Committee to which they all report. All members of the Steering Committee should be trained in Quality Circle techniques. By encouraging a revolving membership with each member having a limited, specified tenure, greater numbers of people will, over time, have the opportunity to administer the program. Meetings should be conducted with a view to reaching consensus, and problems solved using proven Quality Circle procedures. Facilitators should be aware that Steering Committee members will come to the committee, not only as individuals, but also as representatives of the particular group to which they belong. This is a double edged sword, for if some groups have negative feelings about Quality Circles, these feelings will influence the committee. On the other hand, if the committee uses participative techniques successfully, information about their value will filter through the organization via committee members. The Steering Committee should contain not only program boosters, but also its detractors. The trick, as far as the facilitator is concerned, is to make certain dissenting voices are heard, without allowing program initiatives to be undone through negativism. Regular brainstorming on "worst case" and "best case" scenarios, especially where matters of policy have to be decided, allow fears to be voiced and all points of view to be aired. From these brainstormed lists, potential and real problems can be surfaced and solved. The Quality Circle Steering Committee should be at the fore in modeling participative techniques, systematic problem solving, and consensus decision making. All groups should be represented, so that information can flow and issues can be addressed.

(2) Management and Supervisory Training

Where possible, train all managers and first line supervisors in Quality Circle techniques. Whereas participation in Quality Circles themselves is, and should be, voluntary for all concerned, it seems reasonable to expect that managers and supervisors should understand any decision making activity that may be going on in their areas of responsibility, whether or not they choose to participate in it. If time constraints militate against this, the course may be shortened, and if necessary, given in modules. The core components of such a training program should, however, be instruction in Quality Circle problem solving techniques, and the administration of instruments designed to illustrate what consensus decision making is all about how it works, and why it is best for certain issues. Figure 1 gives a sample, two day, basic Quality Circle training course for managers and supervisors. It can also be given over four, half-day sessions, if that is more convenient.

Students should be divided into groups of six. Each group learns the process by going through the problem solving sequence with a real problem to work on. Group members can take turns leading the group through one step. A real problem, one that managers have identified, should be selected to work on so that participants will have real experience of what the process can do for them. Allow lots of time for discussion and voicing of reservations. As each step is completed, a facilitator should give feedback to the group concerning their success with the use of participative and consensus principles. Sixteen hours is not enough time to change group norms, but it is enough to illustrate new ways of behaving and to allow participants to practice them.

(3) Quality Circles at all Levels

Encourage the formation of Quality Circles at all levels of the organization. By applying Quality Circle techniques to management level problem solving and decision making, management, from first line supervisors on up, can demonstrate its committment to open participation and can model effective conflict management behavior. Not all management level decisions will profit by having been put through the Quality Circle process, but where there is a need to obtain the commitment of a large number of people before effective action can be taken on a decision, it is wise to encourage the participation of those whose cooperation will be needed. Here, Quality Circles are particularly relevant. Every manager has had, at one time or another, the experience of making a decision that received lip service at first, but was ignored over time. The good decision is the one that everyone will commit to and actively support. Quality Circle methodology, with its emphasis on consensus decision making and open communication, can be used to insure necessary support.

Similarly, managers are often plagued with problems that affect more than one department. Inter-departmental Quality Circles at the managerial level can work to solve such problems. Again, the facilitator can be on the lookout for issues that would benefit from Quality Circle treatment. Though not all managers will want to join a Quality Circle, those who wish to demonstrate their support of the program can find no better way than by modeling the very behavior they endorse. In so doing, they will solve some of their own nagging problems, and bring some new behaviors into the managerial repertoire.

(4) Special Project Task Forces

While some managers and supervisors may balk at the ongoing time commitment implied by membership in a Quality Circle, or not wish to be associated with something they believe to be "for employees only", they may agree to serve on special project task forces. These are "ad hoc" committees, set up for the purpose of solving problems that have surfaced. More often than not, they are inter-departmental teams and, on the managerial level, deal with issues that fall between the cracks of any one manager's responsibility. Coordination of communications, training and development issues, safety and accident prevention, allocation of office space - these are typical topics that task teams might work on.

When a particularly difficult issue has been identified, it often helps to have more than one task force working on the project. Each team presents its findings to the others and to top management. This is one way to assure that management level groups do not become isolated decision making bodies; and the fact that more than one group is working on the isssue promotes a free play of ideas and works against premature consensus. Groups of top managers who technically may not have to prepare a formal management presentation should be encouraged to make a presentation to employees for informational purposes. Such practices open up channels of communication and make for good employee relations.

Task teams operate along the same principles as Quality Circles. The idea of voluntary participation is key. Ideally, task team members should have had Quality Circle experience and be familiar with Quality Circle teschniques. However, if managers who have refused to serve on a Quality Circle can be persuaded to join a special project task force, the facilitator should see this as a perfect opportunity to slip in some training in problem solving and consensus decision making. If part of the task force's brief is to make a formal presentation, team members will be motivated to use any tools that might help in putting it together.

By giving all supervisors and managers the opportunity to serve on the Steering Committee, learn Quality Circle techniques and to participate in Quality Circles or task forces using Quality Circle methods, the management level is exposed to new ideas and new ways of managing. As more and more managers learn firsthand how Quality Circle techniques can make their jobs easier, they will be less likely to take refuge in the kind of complacency that is a reaction to perceived criticism of the way they are currently operating. Complacency can manifest itself at the employee level, too, when groups resist assessing their own performance on the grounds that "We have no problems". The following strategies may help:

B. Promoting the establishment of participative group norms at the employee level.

(1) When Employees Have No "Problems"

While participation in a Quality Circle should be, in all cases, voluntary; the facilitator should take with a grain of salt refusal to join on the grounds that no problems exist. Such reasons may mask a fear that criticism of job performance is being implied. One way to approach work groups is to emphasize, not so much what Quality Circles can do for them, but what they, as a group, can do for the organization, using Quality Circle techniques. Managers could even identify a problem they wish solved and ask for volunteers from the work group to serve on a team to help solve it. By asking the team to make a formal presentation, and by giving them a list of the kind of information that presentation should include, it will become necessary for the facilitator to train them in the techniques that will enable them to do it. The project selected must, of course, be a real project; and the team selected must have the ability to produce the work. Employees quickly spot a set up. However, a good team will feel proud to have their abilities recognized, and glad to put them to the use of the organization. In the process, they may learn to accept Quality Circles for the value they have and understand the role they can play in enhancing productivity.

(2) When Circles Run Out of "Problems"

Established Quality Circles can fall prey to group think, and when they do, it can manifest itself in a number of ways. The group may rush to quick consensus on issues, refusing to consider alternatives. This is more likely to happen when a charismatic, dynamic leader has emerged. The group may attack a number of small, "nuisance value" issues with great vigor, then decide that they have no more "problems". They may attempt to short cut the problem solving process on the grounds that they no longer "have to go through all of that". To avoid quick consensus, it is important to spend the last few minutes of each meeting critiqueing the process. This can be done orally, but it sometimes helps to ask people to write their comments down on a written critique form (see Figure 2). These forms can be collected by the recorder, and with the facilitator's help, a brief report on them compiled for the next meeting. A few minutes spent at the beginning of one meeting discussing what happened at the last meeting, serves to start the group off on the right foot. Another approach that alters the dynamics of the group, and, therefore, may eliminate quick consensus, is to change the leader after each round of problem solving. Rotating leadership gives everyone a chance to use participative leadership skills, and prevents domination (however welcomed) by one person.

When a circle decides that it has exhausted all issues, a routine task analysis (see Figure 3) should be undertaken before the group decides to disband, or take a vacation. The group begins by listing a number of commonly performed tasks. For each task listed, they briefly describe the task and answer a number of questions: What is involved in doing the task, and why? Who does it, and why that person? Where is it performed? Why there? When is it performed? Why then? Next the group brainstorms on possible alternatives to each answer given. It helps if there is a certain amount of hilarity in suggesting alternatives. The wilder the ideas, the more the group will open itself to other possibilities. Finally, the group prioritizes the brainstormed list to find the best possible alternative. If, after this exercise is completed, the group still can find no issues to take on, then perhaps a rest is in order. Usually, though, several possibilities occur.

Finally, a circle that persistently tries to avoid all of the steps in the problem solving process, should be encouraged to interface with management as much as possible. If the group is constantly giving presentations for informational purposes, as well as for making recommendations, they will try to be properly prepared. The wish not to look foolish is often an incentive to anticipate all objections and in so doing, the group is likely to go back to the problem solving steps, as one way of ensuring that all questions are answered. It helps, too, if managers are fairly rigorous in their requirements. Sometimes, in the first rush of enthusiasm to support the Quality Circle program, managers give circles permission to implement recommendations when their supporting evidence is lacking. This is bad in the long run, for circles forget that they must justify their requests, and managers soon tire of being asked to give their blessing to poorly thought out recommendations.

(3) When Circles Must Work Together

Eventually, Quality Circles will look beyond the confines of their immediate work group to issues that involve cooperation or coordination with members of other groups. After solving several problems, they take justifiable pride in their accomplishments, and sense the value of their unique contributions to overall productivity. Members begin to turn their attention to more complex organizational issues. Sometimes they identify problems that result from poor communication between themselves and other groups. A team can be blind to its ownership or part of the problem. In fact, the very idea that they might be in some way responsible may seem incomprehensible to members, especially in the face of their proven success with solving their own problems. A sense of the futility of dealing with certain other groups sets in. The team consciously restricts its issue selection to those things which it can deal with entirely on its own, and its concerns become increasingly inbred and parochial.

Groups must be encouraged to face their problems squarely, and intergroup issue identification and problem solving should be viewed as an inevitable and desirable outcome of Circle activity. The group facilitator is in a priveleged position when it comes to suggesting specific topics that might be worked on; for, whereas the larger issue of poor communications may be too overwhelming to tackle, smaller issues may be manageable. Often the group will strike items from their brainstormed list of projects to prioritize, if taking on that project will mean having to work with an "uncooperative" group. If the facilitator also happens to be working with circles in the other group, he/she may find the same problem being surfaced; and see it being assigned a low priority for just the same reason. Small problems, ones that members of both groups acknowledge as being problematic, are just the ones to be taken on. Open and frequent communication between individual work groups on issues that are of mutual concern, will lessen the chance of group isolation. Conflicts that arise between groups are much more easily managed if the groups themselves understand that such conflicts are not to be avoided but should be surfaced and discussed.

However, bringing groups together does not automatically mean that differences will be sorted out. Quality Circles which go beyond the confines of their immediate work area, must, necessarily, involve other groups, or their representatives, but unless they are trained in intergroup conflict management techniques, they may find the going tougher than they would at first expect. Such training should be viewed as just as essential to the proper functioning of a Quality Circle as are training in problem solving and internal group dynamics. It should include instruction in negotiation techniques; as well as strategies for channeling requests and recommendations; and a discussion of the particular organizational culture in which the group operates. Such training may be too demanding for a group doing its basic training in Quality Circle techniques, but it certainly is essential to any advanced training program. Actual intergroup problems that exist within the organization and of which the facilitator is aware, may be heavily disguised and used in a "case study" format by groups learning intergroup conflict management. The cases are thereby tailor made to fit the culture in which the participants find themselves. Figure 4 gives examples of the type of intergroup conflict situations that can arise in an organization.

Examples such as these can be used as the basis for setting up case studies designed to train people in intergroup problem solving.

CONCLUSION

The above discussion has been based upon the premise that promoting a Quality Circle program within an organization is largely a matter of persuading groups, as opposed to individuals, to accept it. This can only be done when conditions are such that group norms promote regular examination of the status quo. When the facilitator is confronted with a refusal to support or participate in Quality Circles on the grounds that there would be nothing for Circles to do - this is the kind of complacency that must not be taken at face value. It often merely masks a group reaction to threat. By promoting conditions that discourage group isolation, overly directive leadership practice and the tendency toward reaching quick consensus, the techniques and strategies outlined will help to undermine superficial complacency. No one technique or strategy will, of itself, guarantee the success of the Quality Circle program; and even in combination, such practices are slow to yield results. Change takes time, but some seeds will have been sown.

FOOTNOTES

[1] A primary group is a face-to-face membership group where members work closely together toward some purpose. The boss and his/her immediate subordinates form such a primary group. A reference group is a loose organization of members who feel some identification with each other, but who do not necessarily work closely together. A group of first line supervisors in an organization, is an example of a reference group. People belong to a number of primary and reference groups at any one time, and these exert powerful influences on their behavior. For a discussion of how group norms affect productivity, see Robert R. Blake and Jane Srygley - Mouton, Productivity - The Human Side, (New York: AMACOM), 1981.

[2] A particularly useful article, which sums up the work done in this area is, Barry M. Straw, Lance E. Sandelands, and Jane E. Dutton, "Threat-Rigidity Effects in Organizational Behavior: A Multilevel Analysis", in Administrative Science Quarterly, 26(1981): 501-524

[3] Irving L. Janis, Group Think: Psychological Studies of Policy Decisions and Fiascoes, (Boston: Houghton Mifflin Co.), 1983.

BIOGRAPHICAL INFORMATION

Carol Gabor is an Employee Development Specialist with the Minnesota Department of Transportation, and President of C.G. Associates, a firm that provides consulting services in Employee Development and Participative Management Systems.

Quality Circle Orientation for Managers and Supervisors

AGENDA*

DAY 1

1-1/2 Hours - Reaching Consensus: The Value of Group Decision Making, The Leader's Role

1/2 Hour - Course Structure: Assigning Roles

2 Hours - Module I: Brainstorming**

2 Hours - Module II: Prioritizing

2 Hours - Module III: Data Gathering - Collecting Data, Homework Assignment

DAY 2

1 Hour - Module III: Data Gathering - Analysing Data

3 Hours - Module IV: Cause and Effect Analysis

2 Hours - Module V: Generating a Solution

1-1/2 Hours - Module VI: Preparing a Presentation

1/2 Hour - Wrap Up

*This program assumes that participants have attended a 1-2 hour introductory talk on Quality Circles.

**Each module allows for the trainer to introduce the techniques, the group to practice the techniques, and feedback.

FIGURE I

MEETING CRITIQUE SHEET

Below are listed elements that make for a good meeting. The numbers represent a scale where 1 = low satisfaction, 5 = high satisfaction. Circle the appropriate number for each element.

	This Was Poor				I Was Satisfied
1. Participation - everyone was involved	1	2	3	4	5
2. Meeting Objectives - were clearly stated	1	2	3	4	5
3. Listening - no side conversations, everyone listended	1	2	3	4	5
4. Decision making - everyone supports the decision	1	2	3	4	5
5. Expression of feelings - an open, frank discussion	1	2	3	4	5
6. Conflict - was expressed and dealt with constructively	1	2	3	4	5
7. Action Plan - action steps, dates written down	1	2	3	4	5
8. Responsibility - everyone helped, not just leader	1	2	3	4	5

9. I personally contributed to the discussion (circle one)

0 times   1-2 times   3-5 times   Over 5 times

COMMENTS:

SUGGESTIONS:

FIGURE 2

TASK ANALYSIS FORM

BRIEF DESCRIPTION OF THE TASK: ______________________________

		Possible Alternative (Brainstorming)	Best Alternative (Prioritizing)
Steps Involved:	Why?		
Who Does it?	Why?		
Where Is It Done?	Why there?		
When Is It Done?	Why then?		

FIGURE 3

SAMPLE SCENARIOS FOR CASE STUDIES IN INTERGROUP CONFLICT MANAGEMENT

(1) Dealing with Group Conflict Within Work Area:

The starting up of a Quality Circle appears to have split the work group. Half of the members volunteered to join right away; the others want no part of it. Despite many invitations from the Circle to suggest ideas and attend meetings, the outsiders refuse to participate. Nonetheless, there is loud criticism of every recommendation the Quality Circle makes.

(2) Conflict Between Two Work Areas:

A problem has arisen between the inventory control department and heavy equipment maintenance. Heavy equipment maintenance maintains that they are not being notified promptly when specially ordered parts have come in. This means unnecessary down time for them. Inventory control feels they are being asked to disrupt their busy schedule to jump to maintenance's tune. They are irritated when mechanics hover around the supply window asking for parts that aren't there. A Quality Circle from Maintenance invites a representative from Inventory Control to attend a meeting to discuss the issue. There is a lot of pleasant chit chat. Nothing changes.

(3) Intergroup "Gamesmanship"

Quality Circles from two departments have come together to discuss the use of an empty area in the shop. Both groups are crowded, and need the extra room. They can't share because one group needs a clean space and the activities of the other group produces a lot of dirt. The supervisors of each group are not in the team. The cross department team works very well together and finds a solution that all can live with. They come to give their presentation only to find that one of the supervisors has gone to a higher authority, and the decision has already been made.

FIGURE 4

The Subleties of Communication in Small Group Meetings

Lauchland A. Henry, Sc.D.
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Small groups such as quality circles frequently meet to solve problems and make decisions. Sometimes there is conflict on the way to agreement, and it is not unusual to have groups settle for a compromise rather than consensus. In some cases, it is discovered later that the group has agreed to a solution or decision that no single member favors. None of the members are satisfied in the end, and the organization does not get the best results. Such unsatisfactory agreements result from poor communications. Participants misunderstand statements, either don't read or misread non-verbal cues, form incorrect perceptions of others and fail to present their own feelings clearly. This paper presents some ideas that can improve the decisions and solutions that are made in small groups, by showing how communications in small groups can be made more effective. The contributions of experience, self-concept, personal goals, values and obligations to perceptions are explored, clearly showing the pitfalls that are present when their influence on communications is ignored. Groupthink is discussed with suggestions of how it can be avoided. The result would be better decisions and solutions from the group and for the organization. Finally, techniques for building rapport are discussed as a means of avoiding unproductive conflict and competition in groups.

The problems of miscommunications in small groups can be examined from two perspectives. One views each individual in the group as an independent listener or speaker; the other looks at the group as a unit, a system of individuals interacting with each other simultaneously.

Numerous studies of communications in small groups have thoroughly covered these two perspectives. This paper neither summarizes nor reviews this work. Its intent is to present in a concise fashion some ideas that should be helpful to people involved in quality circles. The paper deals with perception as it influences both the speaker and the listener. The pitfalls associated with these influences are identified and suggestions for avoiding them are given. Groupthink and its causes are described and a way to stop it is presented. In addition, methods for developing rapport in quality circle meetings are suggested.

PERCEPTION

It has long been recognized that the perceptions of speakers and listeners control the information transferred in any exchange. Many factors influence these perceptions. In fact, perceptions are the product of the person's lifeup to the moment of the exchange. This paper will briefly examine experience, self-concept, values, obligations and personal goals as they may contribute, not only to how individuals perceive each other but also to how they perceive situations and, as a result, how their communications are influenced.

Experience is frequently referred to as "the great teacher" and is supposed to teach us what to expect. However, experience frequently causes problems. People are unpredictable. As soon as you think you have them figured out, especially if they believe you think you have them figured out, they will change, just to show you. This means that, despite the patterns of the past, you must always leave room in your communications for change in the individual and not become surprised when it occurs. The constantly antagonistic person may suddenly be agreeable. The friendly person may suddenly be a bit hostile. Of course, the self-fulfilling prophecy may come to bear in that, because you address a person expecting antagonism, he or she may feel moved to accomodate you and thus be antagonistic. A reasonable stategy is to go with the experience when your perception based on it is positive. If your perception is negative, make a conscious effort to make it positive in spite of past experience. Then address the person or group from this positive perspective. To sum up, keep the law of the self-fulfilling prophecy in mind and make your perceptions positive.

We all have concepts of ourselves that are very dear to us and usually differ significantly from the ones other people have of us. Similarly, our concepts of others seldom coincide with their concepts of themselves. These disparities are the primary source of many miscommunications. Take depth of knowledge as an example. It is easy to recognize the way people defer to those who they consider more knowledgeable than themselves on a given topic. Their contributions to groups where such people are present are frequently preceded by statements like, "Charlie's the expert in this area, but..." or "I hope Charlie will correct me if I'm wrong, but..." And of course in some instances they may not even speak and thus deprive the group of the benefit of their ideas for fear of being wrong in the presence of someone who knows more than they do about the topic. Some of us are also subject to the opposite effect. When we think we know more than others on a subject we may address them in a condescending manner, overtly or in our minds, not listen carefully to what they have to say or comment on their contribution in a way that undermines its credibility, especially if it happens to be something that we had not thought of ourselves. Here again, many an idea may be dropped before it has a chance in the face of a loose remark by someone who is supposed to know. Of course, these effects should be countered by expert facilitators and strict adherence to the rules for brainstorming. However, it is the subtle, non-verbal messages that take over in many cases and that are the most telling. In fact, these messages are always present, but in the absence of words they are the whole story; and these non-verbal messages usually tell true feelings—agreement, disagreement, admiration, disdain, etc. Whether we feel we know more or feel we know less, successful communication in a small group setting requires personal discipline not to be judgmental, both when we contribute and when we listen to the contribution of others.

We all have values by which we live. All the people in our culture have values that are identical in many areas. We were programmed at an early age. However, when our values differ, each of us feels that it is the other person's values that are a little bit off. Differences in values may be due to upbringing, nationality, culture, religion, race, education or any combination of these. It is not unusual for one individual in a group to have a set of values that differs considerably from those of other members in the group. Such differences may become a permanent part of how the others perceive this person; and although the differences may be in a specific area, they may influence the way other members of the group communicate with that person in the work setting where such values may have no bearing. When this influence is negative, it may not be overt. It may manifest itself in something as simple as not paying attention to what the person says, not contributing to discussion of ideas or suggestions that he or she presents, withholding ideas that could improve on the person's contributions to the group, etc. Of course, if you are the one with the unusual set of values, you may find yourself tempted to withhold your contribution because of fear of rejection or disapproval, having full knowledge that both can be exercised non-verbally. Overcoming this kind of bias requires a very strong conscious effort. Values are usually deeply ingrained and usually carry strong emotional content. A small group of my fellow professionals were once assigned a problem to solve. One of them was a "different" kind of person whose behavior was considered unacceptable by the other members. As a result, when he developed the solution to the problem, they were unable to accept it.

In almost every work group, no matter how small, there is someone who is obligated to someone else. This kind of relationship frequently translates into communications that ignore errors or fail to probe questionable statements or flaws in reasoning. The relationship may also translate into stronger support than is warranted in certain circumstances. This behavior is sometimes evident in groups where a supervisor is present. Other members of the group may refrain from asking questions about a proposal made by the supervisor even when the flaws in it are obvious. They may also withhold better solutions for fear of repercussions that may come from embarrassing the supervisor to whom they feel obligated. Overcoming the influence of obligations requires daring that allows people to free themselves from the fear of reprisal. Developing this ability requires practice that is more easily acquired on small inconsequential issues in the beginning.

I have always found it easy to discuss a topic related to my personal goals, even when the discussion was not in support of what I had in mind. I may not be pleased with the discussion but I would certainly be interested. And interest is definitely a significant aspect of communications. I am also sure that this is the case in a small group setting such as a quality circle meeting. The members will be more enthusiastic, offer more ideas, look at things more critically and, in general expend more energy on areas related to their personal goals than otherwise. If they like their jobs and their personal goals include success on the job, it is fair to assume that they will contribute more to meetings related to their area of interest. To avoid the inhibiting effect this enthusiasm could have on others in the group, an effective facilitator would be sure to encourage the participation of other circle members to avoid one-sided discussions, dominated by an individual whose interest is piqued because the situation relates to his or her personal goals.

In addition to the contributors to perception that we have explored above, there are also perceptive pitfalls such as stereotyping, projection, defensiveness, and halo effects that require effort to be avoided. These pitfalls are always present, but can be particularly troublesome in the small group meeting such as the quality circle meeting. They may cause members to exhibit subtle aggressive behavior or withdraw from participation, depending on the circumstances.

GROUPTHINK

In addition to the individual effects that have already been covered, there is a significant group effect, sometimes called groupthink, that will be examined.

Janis in his book, Groupthink, has defined and discussed groupthink and illustrated it with many examples from international policies and their negative results. Harvey in his paper, The Abilene Paradox, discusses the same phenomenon with examples from personal life and from business and industry and calls it, "The Abilene Paradox". Since small work groups such as quality circles are sometimes caught up in this syndrome, it is examined here as another dimension of communications in small groups.

Janis describes groupthink as follows:

> "...a mode of thinking that people engage in when they are deeply involved in a cohesive in-group, when members' strivings for unanimity override their motivation to realistically appraise alternative courses of action."
>
> "...groupthink refers to a deterioration of mental efficiency, reality testing, and moral judgment that results from in-group pressures."
>
> "...the more amiability and espirit de corps among members of a policy-making group, the greater is the danger that independent critical thinking will be replaced by groupthink..."

Janis uses examples of policy-making groups in the international arena in situations such as the Bay of Pigs and Pearl Harbor to demonstrate how groupthink works and to highlight the way groups overestimate their own power, are subject to closed-mindedness and succumb to pressures toward uniformity.

When groupthink is at work, the following symptoms are also evident:

1. Not all available alternatives are explored.
2. Searches for relevant data are poorly done, often incompletely.
3. There is selective bias in processing information that is considered.
4. There is no risk analysis of the chosen procedure.
5. No contingency plans are developed in case the chosen procedure fails.
6. Alternatives that are rejected quickly and without analysis are not reconsidered later.
7. Clear objectives are not set.

Examples from the international and national political arenas are not unlike the lapses in judgment made by people in everyday life, either at home or in social settings. In the latter cases they occur when people are more concerned with retaining the approval of others in their group than with developing good solutions to the problems at hand. A group of employees who voluntarily participate in a quality circle could easily develop the closeness and in-group characteristics that present the breeding ground for the groupthink phenomenon.

Harvey defines the Abilene paradox as follows:

> "Organizations frequently take actions in contradiction to what they want to do and therefore defeat the very purposes they are trying to achieve."

He also states that

> "the inability to manage agreement is a major source of organization dysfunction."

Symptoms of the paradox are as follows:

1. Privately, there is agreement by each individual as to the problem or situation being faced.
2. Privately, there is agreement by each individual as to the required steps to solve the problem or cope with the situation.

3. Members of the group fail to communicate their desires or beliefs accurately to the rest of the group. They in fact may convey just the opposite.

4. Collective decisions are then made, based on the inaccurate information. These decisions yield results that are contrary to the group's intent.

5. Group members become frustrated, angry, irritated and dissatisfied with the results and the group's performance, sometimes blaming each other or someone else.

6. If the cause of the paradox is not dealt with, the process is repeated over and over.

How many times have you left a meeting where there was agreement on a decision only to find out that no one present, including you, had been in favor of the decision? This occurs frequently in the world of work and undoubtedly in groups such as quality circles. In the case of circles, this causes poor problem definitions, incorrect prioritizing, poor decisions and inadequate solutions to problems.

Why do these paradoxes occur? They occur because of the intense anxiety people experience from thinking about what they believe needs to be done. So they don't even mention it. The anxiety comes from the negative fantasies that individuals have about what will happen if the group decides what they believe is right. They not only don't present it as an alternative but justify withholding it based on their negative fantasies about the consequences. These negative fantasies are due to the existence of risk. However, life is fraught with risk. The negative fantasies are certainly possible, but the relevant question is whether they are likely to occur. The reason people don't deal with the question of likelihood but treat their fantasies as though they are certainties, is fear. They fear isolation from the group, being called a non-team player or disloyal to the group, or being branded with some symbol of ostracism for taking a position apart from the group. The irony is that not taking the risk frequently causes the negative results to become certainties. The very thing the group fears, actually happens.

Harvey says:

> "much behavior within an organization that heretofore has been conceptualized as reflecting the tyranny of conformity pressures is really an expression of collective anxiety and therefore must be reconceptualized as a defense against acting."

This explains the groupthink phenomenon in a different way. Harvey appears to take the explanation a step further than Janis does.

The way out of the paradox is for the person who recognizes it to own up to his or her true position or feelings and be willing to live with the results of doing so. A statement like the one that follows might start things rolling:

> I have agreed all along to what we propsed, but I really don't believe it will work. I'm afraid we're headed for disaster and would like to hear each of your opinions. I'm convinced that I'm not the only one who feels this way.

Of course there is still the risk of ostracism when this confrontation takes place, but it is not unusual that people will own up to their true feelings and thus afford the group an opportunity to work with integrity. I am sure you remember playing chicken as a kid and how relieved you were when someone finally gave in to end the game. Most kids never admitted that they were afraid nor that they were relieved when the game ended until someone else did. Of course, sometimes they joined together to ridicule the chicken.

The determination of whether the paradox is occurring in a small group meeting can usually be made by paying attention to the way members of the group give their agreement to the proposal being considered. It is well established that when we communicate, the major component portraying our feelings about what we are saying is physical. Therefore if there is disagreement between what we are saying and what we really feel, there will be dissonance that can be observed. When this takes place, the truth about what we are saying is the physical part. Observing dissonance when members of the group are voicing their agreement should certainly be a cue that the paradox is occurring. In a quality circle meeting, the facilitator has a definite advantage in stopping the development of the paradox since he or she will be observing the process of the meeting very closely and so will see the signs early. An effective facilitator will then force the confrontation and bring people's real feelings into the open, thus heading off the paradox or groupthink.

BUILDING RAPPORT

Most people, when they get together, whether in social settings or work groups, show a natural tendency to establish rapport. If there is no rapport initially it can be built in various ways. Someone who is trying to establish rapport with another must direct his or her efforts towards establishing a sameness or at least a similarity that will make the other person comfortable. The basis for rapport is mutual trust and if trust exists, rapport can be established by a process called mirroring. Mirroring is matching the behavior of another person. The voice can be mirrored and so can breathing, gestures and physical posture.

If someone were to imitate the tone of your voice in every way or to match every movement or gesture that you made, it would probably be obvious to you. It might even be irritating and certainly not helpful in establishing rapport with you. Therefore it is clear that effective mirroring must not appear as blatant mimicry. Fortunately, to be effective, the matching does not have to be exact. For instance, if you are a fast, energetic speaker and you are having a telephone conversation with someone who speaks slowly and deliberately, it would probably not work for you to suddenly start to speak slowly and deliberately. But if you changed your pace a little so as to reduce the difference but not be obvious in doing so, you then convey a feeling of understanding and thus establish rapport.

Matching someone's breathing is not as easy to do. If a person is wearing several layers of clothing it may be difficult to discern the movement when he or she breathes. In that case, putting yourself in a position that allows you to observe the edge of the person's shoulder against a background will allow you to see its rise and fall and so get your breathing into the same rhythm. Fully synchronized breathing also requires that breathing high in the chest be matched by breathing high in the chest, breathing in the middle of the chest be matched by breathing in the middle of the chest and breathing in the abdomen be matched by breathing in the abdomen. These locations correspond with the individual's preference for a visual, auditory or kinesthetic mode of communication.

Visual people select pictures from their memories to make sense out of what is taking place. Their eyes tend to be looking up or straight ahead and not focused. They may speak in a high-pitched voice and appear slightly out of breath due to their breathing high in the chest. Their expressions relate to the visual. They say things like, "It is clear to me" and "I see what you mean". Recalling colors and shapes is significant for them.

Auditories use sound as their frame of reference. Sounds, especially their own voices, are important to them. For them it is important to sound good. They indulge in large amounts of internal dialogue and as a result have difficulty in making decisions. They tend to move their eyes to the right or left or down and to the left. They breathe in the middle of the chest. Their expressions have to do with sound. They say things like, "It rang a bell" and "I hear you".

Kinesthetics operate from their feelings. They take time to check out what's going on. Their eyes tend to move down and to the right. They breathe low down in the belly and have deeper voices than auditories and visuals. They say things like, "It just didn't feel right" and "I grasp your meaning".

In each case just mentioned, the eye movements are those of a right-handed person. For some left-handed or ambidextrous people, eye movements may be the opposite to those described.

Each person communicates in all three modes, but has a preferred one. A second one is used sometimes and the third, almost never. An excellent way to establish rapport with people is to determine their preferred modes of communicating and use these modes in dealing with them. Talk in picture-related works to the visual person. Use words like outlook, perspective, focus, bright and expose. Talk in sound-related words to the auditory person. Use words like note, accent, rattle, muffle and growl. Talk in feeling- and touch-related words to the kinesthetic person. Use words like shock, impress, irritate and grope.

Mirroring posture is also an excellent way to establish rapport; it is obviously as risky as mirroring movements in terms of its potential for misinterpretation if discovered. It may not be necessary to mirror someone's posture exactly. A close approximation may be enough to provide the effect you are seeking.

It is important to say here that the use of these techniques for establishing rapport is not recommended as a means of manipulating people. They are presented as a means of facilitating the transfer of information.

I believe that in small groups like quality circles communications can be improved dramatically with techniques for establishing rapport. This improvement would effect a considerable savings of time, time that would normally be necessary for explaining things that are misunderstood. Probably the easiest of the techniques to employ would be to recognize and use the preferred mode of communicating with each member. Recognizing their preferred modes may not be as difficult as it sounds. Their language, eye movements and breathing will always be available as clues. Improving communications by establishing rapport will also offset the unproductive conflict that is frequently present, either covertly or overtly in small groups. It is safe to say that these conflicts are frequently driven by misunderstandings due to miscommunications. Therefore any increase in rapport among members of the group that increases understanding is sure to decrease or eliminate these costly and unproductive exchanges.

There will be differences of opinion in groups; but when there is clear understanding and good rapport it is much easier to direct the energy of the disagreement so as to obtain the benefits that can be derived from these differences.

CONCLUSION

Perception is an important aspect of all communications among people. Alertness on the part of the individual to the perceptions he or she brings to a situation and a willingness not to make them rigid, but to leave room for the other person's perceptions, will go a long way towards improving communications in small groups. Recognizing the signs of the groupthink syndrome and being willing to risk group disapproval will greatly increase the productivity of the group as it will develop better ideas and solutions to problems. Developing rapport with individuals or with the group will also help to improve communications by ensuring the avoidance of unnecessary conflict among members and by releasing energy to resolve legitimate disagreements that will eventually lead to better ideas and solutions to problems.

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BIOGRAPHICAL INFORMATION

Dr. Lauchland A. Henry

Dr. Henry is a graduate of Columbia University where he earned his Doctor of Science degree in 1963. Since then he has held several professional and management positions with The Port of New York Authority (3 years) and the IBM Corporation (20 years). During the last eight years he has been a seminar leader, speaker and consultant in management and professional development. In this role he has led seminars and spoken before thousands of managers and professionals from Fortune 500 companies, school boards, school systems, hospitals and government agencies. Dr. Henry has served on the board of trustees of Packer Collegiate Institute, on the adjunct faculty at Rutgers University and on the faculty at Malcolm-King College. He is a member of the American Management Associations and The International Association of Quality Circles. His book entitled, **The Professional's Guide to Working Smarter**, will be published in 1987 by BEA of Tenafly, New Jersey. He is also the author of two volumes of poetry.

Feedback -- Its Role in Team Building

Bonnie Lucas, Corporate Circles Manager
Intel Corporation

One aspect of an effective team or working relationship deals with how one gives and receives feedback. Before individuals can give and receive feedback, however, they have to agree on a common definition of feedback. This highly interactive session will:
- Offer a definition of feedback
- Offer a feedback model
- Demonstrate a feedback training exercise
- Relate feedback to effective teams and work groups
- Relate importance of feedback to and from customers and vendors in today's highly competitive market

Attendees will receive the complete feedback training module, including objectives, transparency masters, and plan of instruction, for use with teams at all levels in their respective organizations.

FEEDBACK ACCORDING TO WEBSTER

\fēd - bak\ n. the return to a point of origin of evaluative or corrective information about an action or process. (Webster's New Collegiate Dictionary)

BUT WHAT IS FEEDBACK REALLY?

Feedback is a response that one person gives to another person for the purpose of
1. reinforcing positive behavior -- that is, something you want done and/or continued, or
2. providing an opportunity for the receiver to change negative behavior -- that is, something you want done differently or not done at all.

THE TYPE OF FEEDBACK

NEGATIVE FEEDBACK is given when behavior is not satisfactory. It focuses on what was done incorrectly, and it does not offer alternatives. It establishes conformance in that the behavior is modified rather than eliminated.

PUNITIVE FEEDBACK gives a stronger "negative" message than that of Negative Feedback, and as a result, the behavior in question is usually eliminated rather than simply modified.

POSITIVE FEEDBACK is the most effective type of feedback. It reinforces a behavior, almost ensuring that the behavior be continued in the future.

FORMATIVE FEEDBACK is the second-most effective type of feedback. While Positive Feedback requires that an acceptable behavior take place before it can be given, Formative Feedback offers an alternative when the behavior is unacceptable. In other words, in order to give Positive Feedback, one must "catch the person doing something right," and then acknowledge it. Formative Feedback allows you to turn a negative behavior into an opportunity for success by noting the error and then providing the correct alternative rather then simply ignoring the behavior or calling attention to it. One should note, however, that Formative Feedback quickly becomes either Negative or Punitive if it cannot be "used" by the recipient within thirty minutes of being given.

FEEDBACK SITUATIONS IN REAL LIFE

Let's consider some situations and the types of feedback that are commonly given:
- Person constantly turns in reports late. Response: Wait until review time and mention it as "room for improvement." Negative Feedback, typically given too late to really affect a change in behavior.
- Person does a task as expected, nothing more, nothing less. Response: None. After all, it's expected. Negative Feedback with little chance of the task being done even better in the future.
- Person arrives at meetings late. Response: Public tongue-lashing in front of peers. Punitive Feedback that may result in the person arriving on time next time but you can bet there will be hard feelings, and little chance for improved performance in the meeting. If an opportunity arises, person may elect to drop out of group.
- Vendor ships products with errors caught by customer at incoming inspection. Response: None, until eventually the customer finds another vendor. Negative Feedback that results in loss of customer.

It is no mistake that the above examples of feedback are either Negative or Punitive. We tend to give Negative and Punitive Feedback far more frequently than we give Positive or Formative Feedback. Let's take a look at these latter two. Keep in mind, studies show that they are more effective in reinforcing/changing behavior than Negative and Punitive Feedback.
- Person turns in an incorrect report. Response: Explain that the report is incorrect and help the person make corrections. Formative Feedback. When it gets done correctly, acknowledge it. Positive Feedback. Long term result is that the individual's work will improve.
- Person gets to work on time after being late three days in a row. Response: Thank the person (sincerely) and let him/her know you value promptness. Positive Feedback, with increased probability that the person will be on time tomorrow.

- Customer receives substandard material from vendor. Response: Immediately calls a joint meeting to clarify commitments and expectations. Formative Feedback that will most likely result in better communication between vendor and customer together with improved quality of product.

The message that needs to be clearly understood is that behavior reinforced with Positive Feedback is more likely to be repeated over time. Behavior not reinforced with Positive Feedback will diminish in quality and/or quantity over time. In order to give Positive Feedback, you must "catch the person doing it right" and acknowledge it. It is not enough to assume that good work will continue just because it is expected. We all need Positive Feedback. If the person is not performing such that you can give Positive Feedback, use Formative Feedback to alter the behavior and then reinforce the improvement.

FEEDBACK AND EMPLOYEE INVOLVEMENT

How does this apply to employee involvement teams? Teams need feedback just as much as the individuals comprising the teams. Teams need reinforcement for a job well-done and they need to know how they can improve when they have missed the mark. It is up to the members, leader, and facilitator to provide internal feedback on group process and group dynamics. It is up to the organization overall to provide feedback on project management, results, and project maintenance. The emphasis MUST be on the value of POSITIVE FEEDBACK as the number one motivator, understanding that other types of feedback may be necessary at times as well.

SYNOPSIS OF FEEDBACK EXERCISE

Following is an explanation of the exercise that will be modeled during the session. Details of the exercise will be included in the presentation handout.

Six volunteers will form three pairs and participate in an exercise that demonstrates giving and receiving feedback. Each pair will consist of a Giver and a Receiver. There are three segments to the exercise, and each pair will demonstrate one segment. In all three segments, the Receiver will be blindfolded and asked to construct a model from tinkertoys that matches the model built by the trainer. The Receiver will not be given any other instructions and will not see the model before beginning to build. The Giver will give one of three kinds of feedback (explained in the handout). The Giver will not give any instructions. The audience will watch the interaction and summarize. A debrief will take place after all three rounds.

SUMMARY

When the exercise is completed, the message is very clear that, if feedback is going to be an effective tool in business relationships, some very basic communication processes are needed:

1. Two-way communication that is open and non-threatening
2. Direction and clarification of task/process
3. Timely feedback given appropriately
4. Feedback given and received as reinforcement of positive behavior and an opportunity to change negative behavior.
5. Feedback applies within work groups and teams. It applies horizontally and vertically. It applies between vendors and customers.
6. Feedback is essential to the success of our organizations in today's climate of continuous improvement and competing for market share.

SPECIAL THANKS

Special thanks to Cheryl Linch Spencer and Su Lynch for sharing this Feedback model in an ASQC workshop several years ago. I have used it for at least five years with groups of managers, supervisors, and line operators. In every instance, it has been an overwhelming success. It's impact has gone far beyond giving feedback to teams.

ABOUT THE SPEAKER

Bonnie Lucas holds a B.A. in the field of Social Science from California State University, Long Beach. She was a teacher for 5 years in California before moving to Oregon. Bonnie joined Intel in 1980. After one year in production, she became a facilitator and installed Intel's first wafer fabrication Quality Circles. In 1983, Bonnie moved into her current position as Corporate Circles Manager. Her accomplishments include successful Circle installations in five organizations, facilitator and leader training, management workshops, and Quality Circle training development corporate-wide. She also serves as the link between all Circles in the proliferation of projects and results throughout Intel. She presented papers at the 1985 and 1986 Spring Conferences. She has also given presentations and workshops for the Columbia Willamette Chapter of IAQC, and has been published in the QC Digest. Most recently she has been involved in a task force to study the implementation of Total Quality Control at Intel. It is her intention to meld Intel Circles into any future TQC effort that Intel may pursue.

Group Dynamics - Success Through Interaction

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> "A major reason people fail to advance is that they do not work well with their colleagues."
> Lee Iacocca, "The Ford Story"

People are the greatest resource in any organization. To guarantee the long term success of an organization, people must work together to accomplish shared goals and objectives. Group Dynamics are simply interactions with other people. Any facilitator or coordinator must be expert in this area to be successful. The paper begins with examples of difficult group situations. Then, it presents six steps to successfully interacting with others: Sacrificing, Thinking, Organizing, Communicating, Influencing, and Leading. The paper concludes with a standard operating procedure (SOP) that can ensure "Success Through Interaction."

The authors are QC Coordinators for Burroughs Wellcome at the manufacturing site in Greenville, NC. Burroughs Wellcome Co. is a research oriented pharmaceutical manufacturer. Actifed, Sudafed, Zorvirax, Zyloprim, and Septra and more than one hundred other products are produced at this site. The research and administrative headquarters are in Research Triangle Park, NC.

In 1981, six pilot circles were started in the Production and Engineering Unit. Today, there are forty-nine circles at the manufacturing site and twenty-seven at the research and administrative headquarters. Circles are functional in production areas, materials handling, administration, computer services, laboratories (analytical development, chemical assay, bacteriological control, and research and development), maintenance, engineering, personnel, and finance. The multitude of skills, crafts, and disciplines provide many interesting group dynamic situations. The circles organization has been tailored to foster cross-functional communications and company-wide team pride. In the process a method was developed to enhance people skills. The process is based on the six action verbs. It is up to the individuals and the team to make the process work, and Quality Circles work at Burroughs Wellcome Co. by "Achieving Excellence by and for People."

Introduction

In today's complex business environment, all employees must plan for success to achieve corporate and personal goals and objectives. To achieve goals and objectives, individuals must have a system for success and a roadmap to get there. In route, certain sacrifices may be required to maintain the long term success of the organization. Likely sacrifices can be written into the overall plan. The plan must be well defined and organized. Once the plan has been developed, it should be communicated to all levels of the organization. Finally, all individuals, not just QC members, leaders, or facilitators, must influence and lead the organization to success.

Problem People

New projects or ideas rarely fail because of the lack of technology. With the influx of computers into the business environment and advancements in the technical expertise of the workforce, the technology needed to accomplish most projects is in place. More often than not if a project fails, it is because of the inability of individuals to function as a single work unit. Highly skilled and superbly qualified people can bring barriers with them to the team. These communication barriers occur naturally because of varying technical capabilities, different educational backgrounds, individual conditioning, and organizational structures that inhibit cross functional communication. Most groups experience the "problem people." Correctly typing the problem person and taking action to limit the negative impact on the group is essential for success. Most people-oriented training programs describe the major types of problem people and offer corrective action for the behavior problem. Some examples are:

The Latecomer
Typing: Always arrives late, stopping the meeting and wanting to be caught up.
Action: Don't lecture in front of the group. The only way meetings are going to start on time is by starting them on time. Greet the latecomer and continue!

The Early Leaver
Typing: Leaves early and drains the energy of the meeting before it ends.
Action: Don't confront the early leaver before the group. At the beginning of the meeting check to see if everyone can stay until the end. If everyone commits to staying, a potential early leaver is less likely to sneak out. If someone must leave, and announces it, decide whether to continue. Watching people slowly wandering out is like sitting in a bathtub and watching the warm water drain out around you.

The Doubting Thomas
Typing: Constantly puts down everything: "That will never work." Aggressive negativism is a damper on creative effort.
Action: Get the group to agree to a process of not evaluating ideas

for a set period of time, then use this agreement to correct anyone who violates it.

The Non-Supportive Manager

Typing: Nonverbally disagrees in a dramatic manner. They shake heads, roll eyes, cross and uncross legs, slam books, etc. These nonverbals can interrupt a meeting as effectively as words.

Action: First strategy - ignore. Then ask the individual to share their feelings or reactions with the rest of the group. If the non-supporter is disruptive, wait until a break to discuss the problem.

The Whisperer

Typing: Is constantly whispering to a neighbor and is one of the most irritating of the problem people.

Action: Try walking up close to the whisperers. Often this low-key approach will work. If the whispering is disruptive, ask the individuals to share with the rest of the group what they are discussing.

The Know-It-All

Typing: Uses credentials, age, length of service, or status to argue a point.

Action: Acknowledge the know-it-all's expertise once, but emphasize why the issue is being explored by the group.

The excellent people can also cause problems. The creative person does not have patience with the innovative person. Both are necessary for success. The creative person has the vision and the innovative person can implement that vision. Successful managers confirm that the ultimate success of any organization, regardless of size or industry, does not lie in superior technology but rather rests in the hands of the individuals that compose the organization and their interactions.

System for Success

Sacrificing, thinking, organizing, communicating, influencing, and leading are the actions that enable individuals to be achievers rather than sustainers in group situations.

Sacrificing

Giving up something desirable to gain a higher objective or something that is more worthwhile. Individuals must make sacrifices to be successful. In Quality Circles, team players often make sacrifices for the betterment of the group. Once the role of sacrificing is clearly understood, it becomes very apparent that the old adage "If you want a lot, give a lot" holds true even in the organization.

Thinking

Exercising the powers of judgement, conception, or inference. Thinking is one of the greatest organizational and management tools ever conceived. Often taken for granted, thinking is man's greatest time saver. But unfortunately most thinking occurs after the fact. The mind is a multi-billion dollar asset that should be protected and enriched. There are five keys to creative thinking that are important to the group process:

1) Understand the present - you must see where you are
2) Be specific - you must know what you want to do
3) Set deadlines - you must have a targeted completion date
4) Visualize attainment - you must see where you want to go
5) Be committed - you must be dedicated to the undertaking

As individuals and QC members, we spend every minute of our lives in the future and to be most effective we should anticipate and plan for those events.

Organizing

Arranging in interdependent parts, each having a special function or relation with respect to the whole. To achieve goals and objectives, individuals need an organized plan of action. Organizing is said to be the key to creativity. Individuals, as well as groups, have various styles and systems for organizing. John Lee, noted author, lecturer, and time management expert, provides insight into styles of organizing and a system for getting things accomplished.

STYLE - The Four S's

Stackers - file by pile
Stuffers - keep a clean desk
Slingers - have it, can't find it
Spreaders - a little here, a little there

SYSTEM - The Four D's

Do - if it needs doing and time is a factor, do it now!
Drop - Immediately, if it has no value
Delay - if it must be done but time is not a factor
Delegate - subordinates can get the job done and they will grow through experience.

Communicating

Transferring ideas to others by gesture, verbal, or written message. Every method of communication reveals certain characteristics and information that can be useful. An effective communicator understands not only how to communicate, but also how to be an effective listener. Today, organizations are placing more and more emphasis on communications. This emphasis demands that communication pass through three portals: Is it true, Is it fair, and Is it necessary?

Influencing

Producing a desired effect on others without apparent force or direct authority. The ego plays an important role in group interactive situations. Egos enter into every business transaction. The management style used to cope with varying egos is critical to the completion of group projects. An organization's most powerful individual may or may not be the person in the CEO's chair, but most likely will be the person who has the greatest amount of personal power and influence within the organization. Everyone must work with colleagues to accomplish goals and objectives; therefore, influence is a great asset.

Leading

Guiding or directing others to achieve shared goals and objectives. The world's most effective leaders realize the importance of sacrificing, thinking, organizing, communicating, and influencing and how they ultimately effect business decisions. Effective leaders display certain characteristics in their interactions with subordinates and superiors:

1) Take care of support personnel
2) Build pride in other people
3) Show courage
4) Accept criticism
5) Seek advice
6) Act, think, and communicate professionally
7) Set the example to be followed

Conclusion

Sacrificing, thinking, organizing, communicating, influencing, and leading are actions that can increase the probability of success when interacting with other people. A senior manager at Burroughs Wellcome Co. seems to bring it all together in the following Standard Operating Procedure (SOP) for achieving personal goals and objectives within the organization.

1) Present a positive upbeat attitude
2) Straight talk
3) Follow up
4) Project a good image
5) Respect the situations of others
6) Develop and use a network of advisors

Professionals must work through others to achieve goals and objectives. Without the support of colleagues true success is impossible. A Celicote Mission's (coatings manufacturer) advertisement in 1977 says it best, "Every successful endeavor begins with people - their character, ability, pride, and dedication. From there, teamwork produces the final finish."

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More Games for Your "Bag of Tricks"

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This paper describes two new games that serve as team training on group dynamics. "Towerbuilding" and "Balloon Hold" deal with the result aspect of teamwork while stressing the importance of recognizing and improving the group dynamics that make the team successful.

"The problem with teamwork is that you can't do it all yourself."

INTRODUCTION

At 3M problem solving teams are the vehicle by which many improvements are made. Not only are the results of our teams important to us, but we also see the group process as a necessary aspect of the successful team. Therefore, we are constantly developing training that deals with group process. As we all know, the results of a team is a reflection of how well the team functions. We want our teams to work as a functioning unit with all individual members contributing to the team and its efforts.

We feel strongly that it is important to structure our training in a fashion that makes it a "learning experience" rather than just "some more training". Our purpose is to make the training interesting and dynamic enough that the participant not only learns but enjoys the experience and therefore retains a greater amount of the information.

BAG OF TRICKS

We believe that effective facilitators and leaders should carry with them at all times a "Bag of Tricks". This "bag" must have in it a selection of training on problem solving, group dynamics, intrapersonal relationship skills and anything else needed for effective training to insure successful teamwork.

A requirement for an effective "Bag of Tricks" is that we must continually add training techniques to that bag of tricks. We must accumulate a vast collection of training tools if our teams are to improve. We are often called upon, many times with only a moment's notice, to help out an "ailing" team with one of our training tools.

We have two (2) new "games" for you to add to your "Bag of Tricks".

Game #1 - "Towerbuilding"

Towerbuilding was developed to allow members of a team to work together to successfully complete a common goal. Incorporated into the game is the goal which all team members must share. The game also allows the team a chance to discuss and examine the group dynamics that allowed the team to be successful or not successful.

"Towerbuilding" is played by dividing your team into two (2) equal subteams. Each team is given the necessary equipment and instructed that the goal is to see which team can build the largest free-standing tower. The teams are given ten (10) minutes to complete the task.

After the game the teams discuss why they were successful. We define success in two (2) different categories. One category is teamwork--Did you function as a team? The other category is result--Did you build the largest tower? Teams are often successful in only one of the two (2) categories.

Each team then discusses how they worked together as a team and how they could improve their teamwork.

Next the entire group pools their efforts and building material to build only one tower. Afterwards, the entire team discusses how they worked as a team. Did everyone participate? Who was the leader? How do we know he/she was the leader? Finally the team is asked to answer the following question: Did our teamwork (while building the tower) resemble our teamwork we exhibit on other problem solving activities?

Next the team must come up with an action plan that includes ten (10) items on how they can improve their teamwork and have a more effective team.

Game #2 - "Balloon Hold"

"Balloon Hold" was developed to allow a team to share a common goal and work together to achieve that goal. The team is given one hundred (100) balloons and is instructed that the goal is to see how many balloons the team can blow up and hold (the balloons can not be tied off). The team must decide how to accomplish the task.

After ten (10) minutes, the team scores itself with the following "report card".

1) How many balloons did we blow up and hold?
2) Did we have one leader?
3) How did the leader emerge?
4) Was there any struggle for "power" among members?
5) Did you feel you were a part of the team? (Why or why not?)
6) What one mistake did the team make?
7) What would you have done differently if you were the leader?
8) On a scale of 1-10 how effective was the team?
9) How does the teamwork just exhibited compare to the teamwork your team normally puts forth?

Each question is presented to the group. A flipchart is used to record all answers. Next, an action plan of ten (10) items is created by the team to help the team improve its effectiveness.

SUMMARY

Teamwork is not easy. Teamwork requires hard work, determination, and a will to succeed. Teamwork also needs a person to evaluate, guide, and monitor the process. We sincerely hope that these two (2) games will help you in your effort to assure that your teams continue to be successful.

The Able-Bodied Handicapped: Bridging The Gap

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Physically limited adults face a number of difficulties in work activities with the non-disabled workforce. Confronted by destructive stereotypes and uninformed but well-meaning co-workers, the disabled often struggle unnecessarily to function in the workplace. This presentation will present a capsule view of effective techniques and approaches for developing and working with the handicapped in quality circles. We will also look at the quality circle environment and how it correlates to assertiveness training by enhancing specific social-interaction skills and increasing self-confidence and self esteem.

THE ORGANIZATION

The Electro-Optical and Data Systems Group has over 12,000 employees and is located in El Segundo, California. The group is divided into staff organizations and nine operational divisions. The staff organizations carry out functions such as finance, plant services and human resources. The divisions are involved in program management, research/engineering and manufacturing.

Major product lines include laser range finders, electro-optical sensors, fire control systems and complex software. Nearly all products are sold to agencies of the United States and other governments.

There are numerous types of working environments found within the group. These include research labs, manufacturing assembly areas, sophisticated test areas and administrative departments. The group is structured in such a way that it could almost be seen as an independent company. An employee profile indicates a heavy concentration of personnel with highly developed scientific and technical capabilities.

BACKGROUND

At Hughes Aircraft we've formed a unique Quality Circle comprised of individuals with various disabilities. This circle, Hands Across Hughes, spans the entire Electro-Optical and Data Systems Group (12,000 employees) as is represented by individuals with the following disabilities: the completely deaf, the hearing impaired, amputees, limb paralyses and deformities, muscular sclerosis and the mentally retarded. The circle's primary goals and responsibilities are to increase safety in the work area, promote awareness of handicapped concerns and eventually create a network or council of handicapped circles throughout all of Hughes Aircraft.

INTRODUCTION

Physically limited adults oftentimes prefer to blend in with the workforce rather than draw attention to themselves. Many would rather tolerate an uncomfortable situation than register a complaint or even recommend a solution. Negative attitudes, embarrassing situations associated with the disability, and inconsistent or unconscious behavioral reactions of the non-disabled are further examples of common problems disabled persons encounter. Furthermore, nondisabled people have a tendency to avoid interacting with the disabled but, if required to interact, they seek to alleviate discomfort by pleasing the disabled individual. As a result, the physically limited may not receive honest feedback about ineffective or inappropriate behaviors. Successful social functioning may, therefore depend upon the disabled person's ability to put others at ease, elicit their honest feedback and suggest alternate strategies for social interaction.

Much of the handicapping that disabled people experience is imposed by (1) the humanmade parts of the physical environment and (2) social customs, values, attitudes and expectations. The world that disabled people must reckon with is comprised, then, of two major aspects: physical objects and other people. The physical world is by far the less complicated.

This presentation will initially examine the development of "self image" and how that is influenced by other people's reactions and behaviors toward the physically limited. The focus will then shift to the valuing process and language stereotyping. We learn some of the most significant and fundamental facts about ourselves through reflective appraisals or inferences made as a consequence to the way we perceive others behaving and speaking toward us. Consequently, semantics and certain sentence constructions play a prominent role in reducing disability stereotyping.

Finally, we'll examine how the Quality Circle process correlates with assertiveness training to increase social skills and problem-solving capabilities. Through training and circle participation many members become increasingly self-efficient and highly motivated to solve the problems of others before tackling their own concerns.

SELF IMAGE

The development of our self image or self concept is a continuous process beginning on a subconscious level at birth. Dr. Ruth Strang, eminent psychologist and educationalist, defines the concept in terms of four integrating dimensions: the basic self concept, the transitory perception of self, the social self, and the ideal self.

The "basic self concept" is comprised of the physical self, personal appearance and grooming, abilities and dispositions, values, beliefs and aspirations. The second dimension, the "transitory perception of self," is the self perception which the individual espouses at a given moment influenced by moods and recent experiences.

The "social self" is the self as the person believes others see it. This feature of the self image is influenced by other people's reactions to this person's appearance or behavior. Whether these reactions are actual or imagined may be debatable; nevertheless, it has an important effect on behavior. The final dimension is the "ideal self." This is what Dr. Strang believes to be "the kind of person the individual hopes to be or would like to be ." This aspect is greatly defined by the individuals' relations with others and the culture in which he/she grows and develops. The ideals may greatly affect the self image especially when a large disparity exists between the basic self concept and the ideal self.

Contained within the self image is the valuing process. It is through this process that feelings develop, both positive and negative, adequate or inadequate, acceptance or rejection. Consequently, our personality is primarily a product of social interaction. We learn the most significant and fundamental facts about ourselves made as a consequence of the way we perceive others behaving toward us. We learn who we are and what we are from the way we are treated by those who surround us.

Just as others expectations or beliefs have a powerful impact on our behavior, the expectations we have of others has a very significant impact on their behavior.

LANGUAGE STEREOTYPING

Words and labels have immense power to affect attitudes toward oneself and others. Oftentimes conscious or unconscious labelling of the handicapped by the nondisabled becomes a form of socially destructive stereotyping. However, their value as shortcuts to understanding can be used while their distressing aspects should be avoided.

The infusion of certain language habits is as basic as creating an emotionally supportive environment. The other end of the spectrum can be considered the most potent negative influence of all: devaluation. It is difficult to determine which devaluative determiners are immutable aspects of human nature and which are potentially alterable products of human nature, however, if we avoid overevaluation of rationale intellect (mentally retarded are often gifted in terms of nonlinear thinking), avoid overevaluation of physical beauty and prowess and avoid underevaluation of spirituality, we will be much closer to reducing disability stereotyping.

The following five examples can set the stage for more positive ways of thinking about and reacting to people with disabilities.

1. Avoid the shorthanded terms "the handicapped" and "the disabled." These phrases are prized for their brevity, but they carry the hidden cost of summarizing the individual described as nothing more than one of their characteristics, one that conjures a negative image in the minds of most. Remember, they may also be democrats, republicans, Catholics, Protestants, doctors, lawyers, indian chiefs, beautiful, homely or play any number of other roles and possess an array of other traits. All of this is lost and forgotten when they are "collapsed" into the sole category of "the handicapped and the disabled."

2. Avoid the inaccuracy of describing someone as "handicapped" when what is meant is "disabled." It makes perfect sense to refer to a disabled person when that is a consistent and permanent condition for them; however, it doesn't make sense to speak of a handicapped person because virtually no one is handicapped by a disability in every activity. References to handicaps always should make clear in what pursuits or endeavors the individual is handicapped.

3. As often as possible, avoid the use of the verb "to be" and its conjugations in discussing people with disabilities or handicapping conditions. For example, "Robert has arthritis" is preferable to "Robert is an arthritic," when the subtleties of language-induced

stereotyping are examined. The latter construction, like "the handicapped," summarizes Robert as nothing more than his arthritis; the former implies that he is more, that Robert, among other things, has arthritis.

4. Whenever possible, put the person before the disability in sentence construction. "Person with a disability" is preferable to "disabled person." The first thing to stress is the personhood of the subject of the sentence. After the basic mental image has been set, the modifying adjectival clause "with a disability" is less likely to dominate the conveyed concept of the individual.

5. Steer away from passive constructions such as "person in or confined to a wheelchair" in favor of such active constructions as "person who uses a wheelchair." The former conveys an image of passive sitting and victimization. The latter suggests a person who is actively using a wheelchair as a tool for living.

If we actively listen to the conversations we have with ourselves and with others, and if we consciously attempt to avoid the devaluation of the handicapped or disabled, then we are a step closer to comprehending that semantics and certain sentence constructions play a prominent role in reducing disability stereotyping.

ASSERTIVENESS TRAINING

The structured Quality Circle process highlights goal orientation, accountability, mutual help, and the development of communication and problem-solving skills. For the handicapped, these circles are one of the most promising interventions to increase their social skills and their problem-solving abilities.

To conduct these meetings as "normal circles" members were trained in techniques such as non-defensive communication, effective listening skills and statistical process control. During the initial training, members were asked to discuss their handicaps so as to educate the entire circle on the various difficulties which they encounter. This technique not only promoted the awareness of everyone's concerns, but helped to form a cohesive and empathetic circle. By building upon and utilizing this group cohesion, the circle felt a certain mutual responsibility to help the members attain their goals. Selfishness, which could have easily been a deterrent, never became a factor.

Through mutual respect and understanding, the circle began to realize that the group approach to problem solving produced enhanced effectiveness of both solutions and results. Where individual members had failed in the past to effect a desired change, the quality circle began to achieve results. Through the successes of the quality circle, individual members slowly became more self-confident and more assertive. No longer were undesired situations seen as tolerable, but as challenges to the group.

Through these challenging and successful experiences, members began changing their self image. They took more pride in their basic self concept as well as in the group. Certain members began to see themselves as the individual they wanted to be, not as the embodiment of other people's beliefs or expectations.

The overall results from this experience suggests that handicapped quality circles lead to increases in self-perceived assertiveness as well as increases in specific social interaction skills (e.g., refusing help and actively solving personal and group concerns).

Hands Across Hughes' primary goals and responsibilities are to increase safety in the work area and to promote awareness of handicapped concerns. Because of the circle's obvious uniqueness and their group wide participation, they have relied on various organizations (Health and Safety, Security and Facilities Engineering) to help implement their recommended solutions. Some of their accomplishments include:

* Providing amplifiers and TDDs (telecommunication Devices for the Totally Deaf) for the hearing impaired.

* Securing security passes for the hearing impaired to bring their own TDDs and amplifiers to work.

* Assisted in identifying overcrowded handicapped parking and redirected the overflow to various areas around the parking lot.

* Identified areas where loose, wavy carpeting may be hazardous and channeled the findings to the appropriate area.

* Having the lobby's outer doors labelled as "Handicapped Entrances" and unlocked during their operational hours.

* Increased employee awareness of handicapped concerns through an article published in "Inside EDSG" and by having a circle member attend monthly EDSG Group Safety Council Meeting.

BIOGRAPHICAL INFORMATION

Robert B. Ranieri is a staff assistant in the Employee Participation Program Office and was formerly a Systems and

Procedures trainer in the Manufacturing Engineering Department for the Electro-Optical and Data Systems Group of Hughes Aircraft. He has a bachelor's degree in English from the University of California, Los Angeles and a Secondary Education Credential from California State University, Northridge.

Bonnie L. Stephenson is head of the Employee Participation Programs Department for the Electro-Optical and Data Systems Group of Hughes Aircraft. Her office is responsible for training and coordinating all Quality Circle activities for the group. The number of circles in the group has grown from eight in 1981 to 229 by midyear 1986.

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Employee Empowerment: Balancing Individual and Group Needs to Build Commitment

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Employee commitment to participative management in American organizations is impeded by perceptions that skills learned benefit primarily the firm over the individual; that participation is limited to only elementary level, industrial production problems which have little impact on overall competitiveness and job security; and that a basic inconsistency exists in management's recognition of the process as valuable at the line level and its failure to expand and integrate that process into its overall management style for ensuring survival and long-term growth.

"Employee Empowerment" is a uniquely American employee involvement strategy that combines the effectiveness of the basic seven quality circle group problem solving techniques with other, both new and traditional methods typically reserved for upwardly fast-track management candidates, staff specialists, and even entrepreneurs, to harness the brainpower that will enable organizations to recognize trends, spot and seize opportunities, identify and create new markets, products, and services, minimize the impact of threatening situations, and thus increase the likelihood of self-determination. These methods may be applied either individually or in groups, to problems occurring on or off the job, thus reinforcing their rapid assimilation and an increased value and marketability of the employee alone, as well as the firm. This equal benefit to the organization and individual will strengthen commitment to participation and lead to the development of higher quality solutions to the many diverse issues facing American organizations today. The emerging better solutions will then enable us as a nation to exert greater influence over our own destiny.

WHY A UNIQUELY AMERICAN APPROACH IS NEEDED

Four main causes have been shown to account for the failure of unsuccessful employee involvement programs in American organizations. First, is a poor implementation strategy and/or execution of one. Second, is a failure to overcome historically adverse labor management relations. Third, is insufficient recognition. Fourth, and most devastating, is the failure to integrate the partipative problem exploration philosophy into the organizational culture.

Cynics are quick to cite the "Not Invented Here" (N.I.H.) syndrome as the primary reason for this last cause of failure and to urge protectionist trade measures and other ill-advised legislation in a futile attempt to regain our market share. Media campaigns and bumper sticker pressure to "buy American" are inadequate to resolve issues of organizational competitiveness, personal and group contribution, and product quality. While quality circles *per se* were invented in Japan, group participation and personal commitment are as American as the Declaration of Independence.

The most cursory glance at American history reveals scores of examples such as barn raisings, corn huskings, quilting bees, and crop harvestings. What characterizes these processes is a healthy balance between group and individual commitments and benefits. Persons who joined to build neighbors' barns expected to receive an equal commitment as their need arose.

Just as the American group activities emerged to address the needs of our agrarian economy, quality circles, in their purest form, were created to address the unique needs of the Japanese industrial and social environment. Consequently, retrofitting them to serve as different a culture as ours has been accomplished only where much effort, commitment, and patience have been applied. Typically too, its application has been narrowly defined to environments where work is more readily identified and measured. This restriction has prevented the concept from being used in the decision-making arenas where it can be put to great benefit, such as market strategy, long term growth and planning, management development, and the building of employee competence.

American organizations need an employee involvement approach that takes into account the social and economic conditions that characterize our country, including our emphasis on job mobility; entrepreneurship; shorter position tenure; generalist as contrasted with specialist skills; rigid job descriptions; evolving organization structures from pyramid or diamond to flattened or hourglass; short-term, marketing stressed outlook; and basically top-down decision-making processes. The organizational and job stability benefits touted in the quality circle literature are not supported by the reality of the "shifting workplates" so well described by Richard Bolles. These shifting workplates create changes in the economy that are reshaping the very nature of enterprise itself. Like shifting earthplates, moving at first subtly, then forcefully, they can create employment shocks that would startle any job security Richter scale.

SOME CAUSES OF SHIFTING WORKPLATES

Numerous factors are causing the workplates to shift:

- The American economy is changing from a manufacturing to a service and information base with traditional industrial jobs expected to account for only 20% of positions by 1990.
- Merger and divestiture mania is occurring with some $82 billion in assets exchanged in 1981.
- New business startups have risen from 93,000 in 1950 to over 600,000 in 1983. Venture capital is fueling that growth, totalling $10 billion in 1983.
- World competition supported with special national subsidies, is fierce. We cannot compete equally on price terms, but can readily win out in innovation and genius.
- Our recent national productivity record is abysmal. We keep applying outdated methods to complex issues and the result is little, if any real growth.
- Our national debt is staggering, and growing at the rate of millions per day.
- The American trade imbalance continues to escalate as we import more and more of our basic everyday goods.
- The integrity of international banking is under question as vast sums of unpaid third world debt is being refinanced on a regular basis.
- Farmers, one of the most productive sectors of our economy, are going bankrupt at a record pace.
- The 1950's talk of an international division of labor has become a reality, with many third world nations beginning to step in and replace the U.S., Europe, and Japan in steel and the other heavy industries.
- Political shocks in recent years and the very complexity of the issues our elected officials grapple with daily have taught us that we must not look to others to solve our problems.
- The writing and critical-thinking skills of our youth are still dangerously low and we lag behind other nations in students' aptitude scores in math and science. Public and private schools will have to replace half of the current teaching force by 1992. This will be difficult since fewer graduates are choosing teaching as a career and fewer teachers are remaining in education, citing inadequate training and poor working conditions as the problem.
- Hospital charges are increasing more slowly, but with few gains in productivity the cost to provide a day's care continues to rise.

These subtle shifts are increasing organizational cost consciousness, causing many organizations to shrink middle management, and creating an entire new class of unemployed workers. Massive reductions in force are commonplace, and corporate loyalty is a thing of the past.

OUR MANAGEMENT PRACTICES MUST MIRROR OUR VALUES

Our traditional management values and practices, developed during the early Industrial Brawnpower Age, do not reflect American sociocultural values and will not support our efforts to capitalize effectively on our brainpower. The chart below graphically depicts just how opposed they are.

Sociocultural Values	Traditional Mgmt. Values & Practices
Democracy	Autocracy
Capitalism	Feudalism
Pluralism	Homogeneity
Pioneering spirit	Lock-step
Thinking	Taking orders
Synergy	Risk-averse portfolio management[1]

What we need to do then is not necessarily copy the process of another nation, but make our management practices consistent with our values so that we can release the energy and genius we need to be competitive.

Much of our brain talent lay in our baby boom and younger workforce. Called "gold collar workers" by Robert Kelley, they are educated, mobile, quick, smart, and devoted to personal and professional competence. They seek immediate and long term gain, and want security based on performance. They are not interested in company loyalty, company promotions, or company directives. They know that over one-half million employees are unjustly fired every year and that the average American will change jobs every 3.6 years. Many lecture or have small businesses to take advantage of their talents to build their reputations and financial security.

Not susceptible to carrot and stick motivation approaches, they want challenge, support, respect, and rewards; values that mirror the traditional democratic values depicted earlier. They offer knowledge, professional reputation, expertise, industrial contacts, interpersonal skills etc., in exchange for equipment and facilities, interaction with professional colleagues, a market reputation, contacts, good working conditions, training, and benefits.

These gold collar workers expect to participate. In fact, over 84% of college graduates stated that they would be more satisfied and productive if allowed active participation in their work. A study by the National Commission on Productivity revealed that "90% of workers felt that they could be more productive." They also realized that higher productivity would lead to higher profits. Yet over two-thirds felt that in our feudalistic corporations, increased profits would not benefit the workers. Instead, they would come at the workers' expense.[2]

In a turbulent economy, it is human nature to retreat to whatever knowledge has been accumulated over the years, to apply institutionalized logical methods, policies, procedures, and analytic techniques in an effort to answer one specific question. Professors Chris Argyris of Harward and Don Schon of MIT refer to this process of detecting and correcting errors, much as a thermostat senses and adjusts temperatures, as single-loop learning.

Organizations today though need to know *which* questions to ask and those answers that are useful. Argyris and Schon call this double-loop learning. Unfortunately, too many organizations are afraid to question their practices or policies; they are scared to openly confront objectives, policies, or methods of operation. Those who do are considered disloyal or troublesome. These fears camouflage errors that indicate problems. The game of hiding errors becomes a part of normal organizational life. As individuals play the game, they also lose their ability to see errors.[3]

WHAT EMPOWERED EMPLOYEES CAN PROVIDE ORGANIZATIONS

Empowered employees can provide the supportive, energetic means and method for addressing these global issues and for improving the following vital functions:

- strategic planning
- new product or service market identification and exploitation
- employee wellness
- innovation participation, quality, and skills
- resource productivity
- workforce development and maintenance
- customer development and service
- leadership building
- decision making
- employee recognition

WHICH ORGANIZATIONS NEED THIS EMPOWERMENT?

Brain banks - organizations where brainpower, not materials, constitutes the inventory. Unlike traditional inventory, such as machines parts, the brainpower inventory has legs and goes home every night; with no assurance that its inventory will return in the morning. This inventory is difficult to catalog and costly to replace. Leveraging brainpower and keeping it working for you and not for a competitor is a major task. The job is made even more formidable with the presence of headhunters, corporate raiders, "vulture capitalists", merger maniacs, and almost daily introductions of new technological advances. Examples occur in R&D, engineering, aerospace, advertising and marketing, financial, attorneys, computers, and publishing. Employee empowerment provides a way of balancing both organizational and individual needs.

Service providers - environments where consumers vote with their wallets. The issues fueling the fire are cost reimbursement ceilings in the health care industries, deregulation of the financial and travel industries, the break-up of AT&T, and the emergence of thousands of new service businesses each year that address the changed demographics of our population. Customers have many more options available today and demand to be *pleased*, not merely satisfied. If your organization can do that, you will have added another salesperson at no charge. Employee empowerment facilitates understanding and commitment to customer satisfaction, cost consciousness, and personal productivity.

Public institutions - particularly educational and governmental organizations where responsible stewardship of scarce resources makes headlines and the public is demanding a more visible return on investment. Executive order 12552 dated February 25, 1986 sums up the national cry with specific instructions to each agency to improve cost-effectiveness of its programs. Employee empowerment broadens the field of view for civil servants who customarily are taught to use only tunnel vision. Even minor daily victories here will produce tremendous results for both the workers and the public.

Mature organizations - primarily manufacturing firms in virtually all areas where our competitive edge is innovation, *not price*. This is particularly difficult as bureaucracy creeps into maturing organizations, replacing earlier devotion to product excellence and service. One of the great barriers to speed in innovation is slow communication. Employee empowerment enables us to readily and non threateningly cross the lines that divide organizations into functions so that we may gain exposure to other ways of thinking and working, to enable us to make associations, create, and share ideas.

BUILDING ON THE "BASIC SEVEN" EMPOWERS PEOPLE

Becoming a superior organization strategist is more than being able to correct deviations from a standard, valuable a skill as that is. Creating a better quality of life demands expertise in recognizing, understanding, creating, shaping, and presenting facts and information. It also requires proficiency in obtaining data, sharing it, generating better solutions, and communicating them. Those interactions take place through meetings, group activity, consulting, sponsoring, and goal setting. Thorough understanding of the problems and their implications is essential to creating workable solutions.

The quality circle basic seven steps in the problem solving process provide a solid foundation for gaining this understanding. Employee Empowerment builds on that foundation to increase its usefulness in solving a greater number, variety, and complexity of problems more effectively. The following outline depicts this expansion of skills.

SKILLS LEARNED THROUGH EMPLOYEE EMPOWERMENT

- I. Identifying Issues
  - A. Brainstorming Methods
    - 1. Sequential
    - 2. Random
    - 3. Cross-fertilizing
    - 4. Nominal Group Process
    - 5. Group-Individual-Group
    - 6. Backwards from the Objective
    - 7. Brainwriting
  - B. Collective Notebook
- II. Determining Cause and Effect
  - A. Ishikawa Diagrams
  - B. Cause & Effect Diagrams with Addition of Cards
- III. Data Gathering
  - A. Written Research Methods
    - 1. Sleuthing in the Organization
      - a. Cost, Production & Sales Data
      - b. Materials Lists
      - c. Specifications
      - d. Blueprints
      - e. Procedural writeups
      - f. Time Studies
      - g. Public Information
    - 2. Sleuthing at the Library
      - a. On-line
      - b. Off-line
  - B. Oral Research Methods
    - 1. Discovering Your Network
    - 2. Conducting Informational Interviews
  - C. Professional Consulting Methods
    - 1. Paving the Way for Interaction
    - 2. Written and Oral Surveys
    - 3. Sampling
    - 4. Interviewing
    - 5. Listening
    - 6. Crossing Organizational Boundaries
    - 7. Ethical Considerations
- IV. Focusing on Vital Issues
  - A. Pareto Charts
  - B. Histograms
  - C. Determining Nature and Implications
- V. Shaping Solutions
  - A. New Products or Services
    - 1. Current Work Byproducts
    - 2. Complimentary Products
    - 3. Marketing Products Used In-House
    - 4. De-featuring Products
    - 5. Rescuing Throwaway Byproducts
  - B. Manipulative Stock Questions
  - C. Mind-Mapping
  - D. Developing Personal Daily Ideation Habits
- VI. Presenting Ideas
  - A. Deciding What Information to Communicate
  - B. Determining How to Communicate It
    - 1. Storyboarding
  - C. Deciding on Formats
  - D. Developing Clear Presentations
    - 1. Visuals
    - 2. Oral Material
    - 3. Reports and Handouts
- VII. Meetings are the Medium
  - A. Four Characteristics of Effective Group Meetings
    - 1. Dedicated Time
    - 2. Structure
    - 3. Training
    - 4. Preparation
      - a. Agenda
      - b. Minutes That Call for Action
      - c. In-Between Communication & Tasks
  - B. Four Stages of Group Development
    - 1. Forming
    - 2. Storming
    - 3. Norming
    - 4. Performing
  - C. Monitoring Group Dynamics
    - 1. Problems That Occur in Groups
    - 2. Using Process Observation Forms to Promote Effective Resource Utilization
- VIII. Managing the Effort
  - A. Setting Goals
  - B. Standards of Evaluation
  - C. Evaluating Results

EMPOWER EVERYONE

All people throughout the organization need to learn these methods. As employees develop confidence and expertise in using skills such as mind-mapping, storyboarding, researching, sampling, interviewing, listening, communicating, planning, and personal productivity, they gain knowledge of the organization, its local, national and international customers, markets and competitors, and, supported with this information can pose more workable solutions. The organization is then one entity supported by many capable persons. Employees, for their part, learn processes that will help them to be not only more effective workers, but better parents, spouses, volunteers, and friends. Not only that, they will be far more marketable in a nation where unstable working conditions are a way of life. They will become career self-managers, armed with information, and as all Americans know, information is power, and power is vital to self-determination, the foundation of freedom.

FOOTNOTES

1. Robert E. Kelley, The Gold Collar Worker (New York, 1985), p.32
2. Kelley, p.35.
3. Kelley, pp.38-9.

BIOGRAPHICAL INFORMATION

Constance M. Walker is president of Constance Walker Associates , Inc., a Houston-based consulting firm engaged in organizational problem solving, information research, and productivity management. A former U.S. Customs manager, she led the expansion of its quality circle program into ten Southwestern locations and now into several New York locations, including JFK International Airport and the Newark Container Facility, the largest in the world.

She has designed and taught numerous courses to thousands of people in the areas of program management, quality circles, job search, personal and organizational planning, time management, and problem solving. She has received many awards and her work with quality circles was the subject of a case study published by the American Productivity Center. A native of Washington, D.C. and a graduate of Virginia Tech, she is listed in Who's Who of American Women, Personalities of America, and The World Who's Who of Women.

BIOGRAPHY

Mr. Robert J. Greene is the Excellence Coordinator on the staff of the Manager of the Advanced Technology Business Unit at the Endicott, N.Y. Site for the IBM Corporation. He is currently responsible for the Excellence Plus Program, Excellence Circle Training and Facilitation for the Unit.

As Value Engineering Administrator, Bob has conducted workshops in the U.S., Canada and Europe. Other duties have included short and long range manpower planning and engineering design release activities.

Bob has a BS in Industrial Engineering and an MS in Engineering Administration from Syracuse University.

As an adjunct professor in the State University of New York, Bob teaches evening division courses in Organization Behavior, Human Relations and Management. A colleague of the Creative Education Foundation, Bob instructs at the annual Creative Problem Solving Institute at Buffalo State College.

Bob is the Region I Director of IAQC and a member and Director of the Southern Tier Chapter.

C: New Twists/Other Approaches

A Customer-Driven Quality Management Program: Working Model for Organizations in Search of Quality

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Dr. Ishakawa explains that "the first step in quality ... is to know the requirements of the consumer (or customer) ...", and suggests that we should not just be concerned with the requirements of external customers, but also internal ones.

Dr. J.M. Juran notes that, when a product has a clear quality superiority which a customer accepts ... as present and useful, then share of market is decided primarily by that quality superiority, all other things being equal.

A Fortune magazine article entitled "Renaissance of American Quality" noted that the bottom line of quality improvement programs is customer satisfaction. One executive defined quality as fitness for use and perceived value and asked, do customers feel they are getting value for their money? In any business, if customers do not think they received very much for their money they probably will not be back very soon or very often.

"The customer is king", is a traditional American notion which is more important than ever in today's competitive world. In this paper we suggest an effective approach, based upon Deming's Plan, Do, Check, Act (PDCA) cycle, for interacting with customers, internal and external to the organization, for management led quality improvement.

In most organizations, customer studies are associated with a marketing department. Their research is usually supported by major investment of corporate funds. Often these studies are concentrated on product design and advertising in relation to the characteristics and behavior of segmented markets. We try to influence customers, but we should also be influenced by them: the latter complements the former - it is necessary for a comprehensive approach to quality. Customer influence (the voice of the customer) can be evaluated and encouraged using techniques presented here.

QUALITY MANAGEMENT

Quality management requires attention to a broad range of administrative and operational activities; many organizations have active programs for continuous improvement in these areas. How is progress and success measured? Often, market share, profits, sales, and other quantifiable global variables are monitored to get an impression of success or failure of company initiatives. Clearly, it is difficult to determine cause and effect relationships using quantities which tend to average both beneficial and counterproductive actions. These measures are not available in real-time but are delayed, and are too far removed from the routine conduct of business operations.

More useful and beneficial to day-to-day management is ongoing direct interaction with customers. By using a thought-out and structured process combined with communication skills awareness, managers working with customers can realize accurate and steady guidance for quality management.

Dr. Deming asks "What is quality? I have much amusement by inquiring of top management just what quality is, and what quality they wish to produce. They usually confess, after a few questions, that they had not given the matter enough thought ... what quality-characteristics are important to the customer? What qualities create dissatisfaction in the customer's mind? How do you know?"

To answer these queries, a continuous improvement process based on the Plan, Do, Check, Act (PDCA) cycle can be applied (Figure 1); it requires inquiry as to what customers think about products and services.

The PDCA Customer Study Cycle

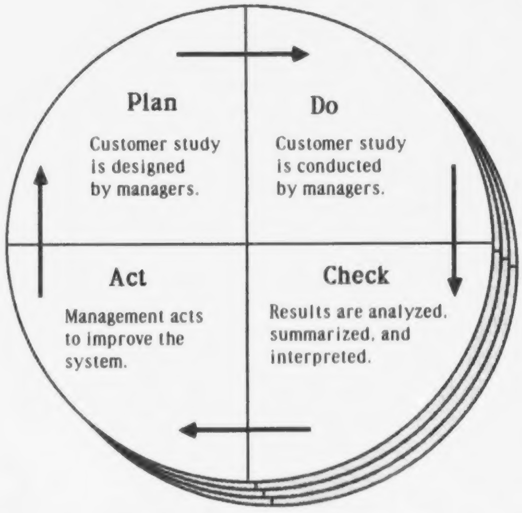
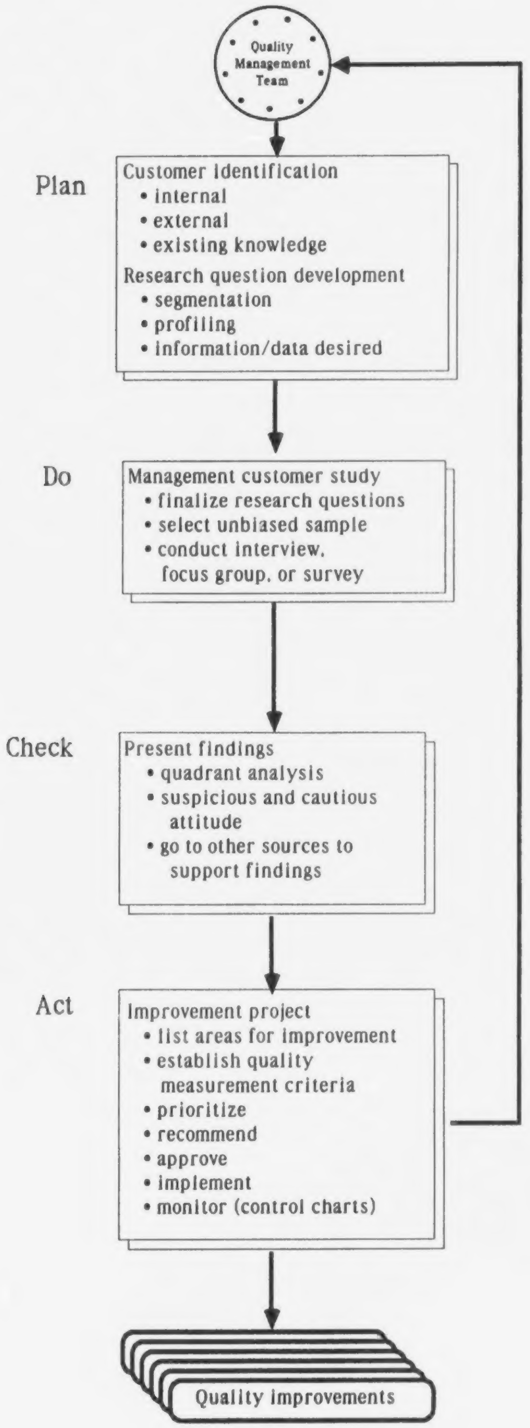

Plan
Customer study is designed by managers.
Do
Customer study is conducted by managers.
Act
Management acts to improve the system.
Check
Results are analyzed, summarized, and interpreted.

Figure 1

Just reviewing unsolicited customer responses (usually complaints) is not always effective. For example when pursuing complaints things can be made worse, if energy is spent to rationalize the blame for customer dissatisfaction. We propose that properly designed customer research conducted by management is one of the most effective ways to answer quality related questions (Figure 2).

Customer-Driven Quality Management Process



Quality Management Team
Plan
Customer identification
• internal
• external
• existing knowledge
Research question development
• segmentation
• profiling
• information/data desired
Do
Management customer study
• finalize research questions
• select unbiased sample
• conduct interview, focus group, or survey
Check
Present findings
• quadrant analysis
• suspicious and cautious attitude
• go to other sources to support findings
Act
Improvement project
• list areas for improvement
• establish quality measurement criteria
• prioritize
• recommend
• approve
• implement
• monitor (control charts)
Quality improvements

Figure 2

CUSTOMER IDENTIFICATION

Such a simple matter - or is it? Who are customers? What do we know or want to know about them, their characteristics, needs, motivations, habits, wants, perceptions, etc? Are there differences between what they say and what they do? Are we speaking the same language as our customers? How do customers differ?

Everyone in an organization may have an answer to the above questions. They think they know what the company's customers want and need. Consider a unit that processes driver licenses and handles hundreds per day. They want to improve their forms using a participative approach. The manager and subordinates sit down and "think through" changes in the license application. They may call in technical experts, and even get input from consumer groups such as an automobile association. Do they invite the customer who uses the forms to say what they think? Do they give the form to twenty users and then interview them as to how they filled it out? If they do interview customers, are they only the brightest, most articulate customers?

By following a few simple procedures managers could segment their customer base, profile each segment, prepare research questions, remove bias from the questions, conduct a customer survey, analyze results, and consequently make improvements based on factual information.

RESEARCH QUESTIONS DEVELOPMENT

In preparing a formal interactive customer-driven quality management program, we can benefit from extensive work of successful experts in the field of Marketing. We can proceed aware of the techniques and methods used in advertising, market definition, data acquisition, selling, analysis, and behaviorial science.

One of the first questions to ask is, how are our customers segmented (classified into groups having common or similar characteristics or behavior)? For example, fast food restaurant segments might be heavy, light, and economical eaters, each group with a different notion of value and quality; a computer management group may have internal customers segmented into secretaries, accountants, and data analysts; each with different needs and quality criteria.

Identifying and defining segments requires discussion, experimentation, and opinions from co-workers. Market (customer) structure is not static and changes with time according to trends, fads, economics, and other variables.

Having labeled (expected) segments, they can be defined by profiling. Here the characteristics, desires, perceptions, likes and dislikes, economic class, habits, etc. are explicitly noted. Initially the result is a collection of impressions and guesses. Some of them will be on target, some will be off a bit, and some dead wrong; of course, initial profiling will be incomplete because of gaps in the knowledge base. Initially we cannot be sure of what customers are like or what they want!

Every gap in knowledge, uncertainty, and hypothesis can be turned into a research question to focus on a specific area or address a broad range of subjects.

Segmenting and profiling exercises are very useful for recognizing what is known or unknown about customers. Questions raised are the foundation for building a customer research approach and an implementation plan.

Focus groups and interviews can be developed not only to get factual and logical answers, but also to get the perceived, imagined, or opinionated, responses given by customers. By knowing how the customer's views are different from those in the company, or in reality, action can be taken to narrow the differences, and make beneficial modifications.

MANAGEMENT CUSTOMER STUDY

Now all we need to do is ask customers our research questions and act on the answers we get, right? Unfortunately it is not that simple. Research questions are only the starting point. They must be carefully and skillfully converted into a form which is conducive to objectivity, lacks bias, does not coerce or sway, and encourages customer cooperation and desire to participate in the process. This transformation creates a customized interview from a specific set of research questions.

In general, interview design is a complex task calling on many disciplines for optimum results, but we suggest that managers can design interviews which are very effective in guiding quality management teams. By managers being sensitive to bias, preconception, tradition, and emotion they can usually derive a good interview.

The management team role plays the customer/manager interview to ascertain reaction to each question. The role players try to be objective regarding organizational perspective by imagining the point of view of the segments represented. A few tries should result in an effective refined interview. It is useful for managers to practice role-reversal and alternation. The role play has a dual purpose: in addition to interview design it also helps to develop interview skills.

For the actual study, select from the customer segment population a sample that represents the cross section and profile of that segment. Have several managers conduct interviews in the same sample to remove potential influences peculiar to a particular interviewer (manager). There are basic rules to consider when preparing and conducting interviews:

- Know your goals. Write down in outline form everything you would like to know.
- Be objective. Most people are willing to help if you approach them honestly and tell them what you need and why you need it.
- Listen. Don't lead, sell, or debate the customer.
- Start broad and open-ended. Get more specific later in the interview.
- Remain neutral. You are trying to get the facts as seen by the customer.
- Start with non-threatening questions. Save controversial questions for later in the interview after rapport is established.
- Clarify by asking follow-up questions. Be careful not to digress.
- Be intuitive and flexible. Listen with a "third ear" -- a totally fixed mechanical format prevents flexibility, and can cost the interviewer important information.

In addition to interviews, we can get customer feedback with focus groups, surveys (questionnaires) and customer impersonation.

An interview of an assembled group of people is called a focus group. In this approach, thoughts and comments may induce additional thoughts and comments and people tend to interact differently than they would one-to-one. As most people hear others talk about a subject, they tend to talk more about it themselves - a synergistic effect. However, some caution is called for concerning focus groups. Information can be curtailed and distorted using this technique; groups of internal customers can be influenced by being "members of the same family". Don't assemble a known hostile group to focus on a current sensitive issue.

On a case-by-case basis, focus groups can be considered. Be aware that the group dynamics and interactive behavior of a focus group is complex and requires education and skills not usually taught to line managers. In one appropriate case a scientist used a focus group to get input on the future impact of a new advanced technology. Technical experts from a variety of disciplines were invited for a "roundtable discussion" that generated useful facts, opinions, and a list of action items for evaluating the new technology. The moderator of the focus group was aware of potential bias and took specific steps to avoid biasing discussion; a short open-ended questionnaire was handed out at the end of the session for additional input in light of the focus group experience.

A third method is the written response survey. It is recommended that the novice seek expert advice when it comes to this more advanced technique. At a minimum some special training and experimentation is needed to develop a valid questionnaire, and encourage response.

Another very useful technique is customer impersonation wherein a manager plays the role of a customer and records his or her observations, e.g., a consultant who worked for a bank opened an account to actually experience what it was like to be a customer of the bank. In another case, a bank branch manager visited other branches as a customer to make comparisons. When appropriate managers can benefit from applying this technique, but the delicate nature of the technique should be considered in advance.

At the end of a customer study it is a challenge to analyze, summarize and interpret the findings. This may be harder than first realized. Several interviews can generate many pages of notes, recorded focus groups can generate hours of transcripts and questionnaires must be edited, coded and entered into a data base. It is very important to think about the intended analysis component and specific hypotheses that are being tested before conducting the customer study so that the form and structure of the study design is a "natural fit" for analysis and deduction.

CHECKING

After a customer study has been made check the findings before recommending and implementing improvement projects. One simple, but very effective, tool to analyze customer "data" is to use quadrant analysis.

Figure 3 shows a quadrant analysis which delineates what a customer wants and what they get. The specific system attribute under consideration would be shown in a given quadrant based upon customer interviews. Recalling the previous example of the scientist who conducted a focus group, it was found that in general customers wanted the new technology, but were not getting it (Point A). Knowing this, management can act over time to implement an improvement project which meets the customers needs (Point B).

The Customer Quadrant

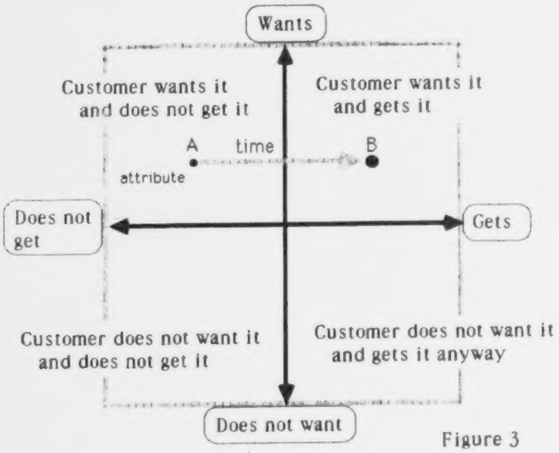

Wants
Customer wants it and does not get it
Customer wants it and gets it
A
time
B
attribute
Does not get
Gets
Customer does not want it and does not get it
Customer does not want it and gets it anyway
Does not want

Figure 3

Quadrant analysis, routinely used by market researchers, may be unfamiliar to the managers involved in a customer study. (Of course, there are many other techniques useful for this phase of the process. Managers should try to be familiar with them and also draw on available expert resources, but if not careful, they can get sidetracked by too much emphasis on what is the domain of Marketing - an end in itself.) Quadrant analysis and application of fundamental statistical techniques should suffice to have line managers "sense the customer pulse" so that they can make informed decisions and take effective action for improvement - a major attribute of quality management.

In conducting interviews and analyzing data it is important to maintain a suspicious and cautious attitude, check accuracy and reliability of "data", search for factors which might affect the validity of the approach (are we studying what we think we are studying?), and analyze findings for statistical significance.

ACTION

The quality management team, having collected and presented their findings, analyzes the information and prepares conclusions, recommendations, and suggestions for improvement.

Any plan of action for improvement should take into account the priority (importance) of each finding in regard to benefits derived; here Pareto charting and quadrant analysis can assist. Utilizing the results of the customer study, the management quality team prepares a well-defined improvement plan of action to be implemented throughout the organization. Here, quality teams, task forces, project teams and other participative approaches prove effective in achieving objectives. Before implementation of global or major undertaking, ideas and approaches should be tested on a sample of customer segments.

CONCLUSION

We have presented a program which is based on the bottom line in any business or organization - the customer. Remember, however, that customers are motivated by their desires, and are not always fair, equitable, or acting in the interest of sound business. Thus, what is important for quality management is knowing the consequences of decisions via customer feedback, reaction, and behavior.

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BIOGRAPHICAL INFORMATION

Joseph L. Abita, Ph.D., is a senior professional staff member of the Applied Physics Laboratory of the Johns Hopkins University engaged in engineering technology development and implementation, program/project management, and business development. Prior positions have been as a technical manager at COMSAT, General Electric, and Eastman Kodak. Through his career he has made contributions and gained experience in broad and diverse technical and operational environments spanning R&D to manufacturing. Dr. Abita has a number of awards and honors, technical and management publications, and several patents. He is an instructor of the JHU Whiting School of Engineering, Chairman and member of the Electromechanical Advisory Committee for Montgomery College, and is a senior member in the Institute of Electrical and Electronic Engineers.

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Group Decision Making Methods; or
(Participative Management - How did you get so misunderstood?)

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The most common cause of frustration in "Participative" organizations is misunderstanding about decision making. Does "Participation" mean that all decisions will be made by consensus? Does it mean that the business is now a democracy? Hardly. As an organization transitions toward "Employee Involvement," the organizational system which is bound to be impacted most is the Decision Making Process. Since most organizations do not truly understand the complexity of their decision making processes and methods, this transition can be particularly painful. This paper explores several different decision making methods which are in use constantly in virtually all organizations. Each method will be analyzed and evaluated as to its appropriateness (or inappropriateness) for different types of situations.

INTRODUCTION

Decision Making is quite a fascinating concept. It is an involved set of skills, processes, and methods being constantly utilized by virtually everyone. A person's entire daily activity is a non-stop series of decisions.

Many decisions are made quickly and within our own minds. Decisions like:

* What should I work on now?
* What should I have for lunch?
* What route should I take to work?

These are examples of decisions which we typically make very rapidly and without consulting others in the process. Even though answering these questions may still require a methodical thought pattern and analysis, it is the decisions which affect or involve other people which tend to be much more difficult. It is the type of decisions which affect or involve other people which tend to require the use of one of the "Group Decision Making Methods."

Decision which affect or involve other people are also a common cause of frustration, bitterness, and even anger within organizations who are striving for greater "Employee Involvement" in decision making. New expectations of involvement and power begin to shake the foundation of the existing Decision Making structure. Complications tend to develop when the organization's Decision Making structure is not very strong (or clear) to begin with.

For example, here are some comments which tend to be heard in organizations which have weaknesses in their Decision Making structure:

* "Why do they ask for my opinion when they are only going to do what they want anyway?"

* "When are they ever going to make a decision on this?"

* "My boss consistently overrules my decision. They give me the responsibility, but not the authority!"

The presence of these types of comments within an organization is a sign that there are people within the organization who are not clear about the Decision Making structure, or their role in it, or both. And, as is the case with all fundamental organizational weaknesses, the addition of Employee Involvement Programs will not, alone, solve this problem. In fact, they will probably expose and highlight the problem rather quickly. Unfortunately, this "highlighting" process may be very painful to people at every level within the organization, and is typically not recognized correctly (no less dealt with effectively.)

Fortunately though, there are effective ways of strengthening an organization's Decision Making structure. A quick look at a very simple Decision Making model can give some insight as to how people could say, and believe, those previously stated "frustration comments."

Step #1: Suggestion

Step #2: Analysis

Step #3: Recommendation

Step #4: Decision

Obviously, all properly made decisions go through these steps. Sometimes, all four steps are done in a split-second thought process, sometimes the process may literally take years. Sometimes all four steps are "owned" by the same person; sometimes each step is owned by a different person or even groups of people. The key point here is: How often do we know who is ultimately responsible for each of the steps on a given issue, project, etc...?

Each of the "frustration comments" can be attributed to the existence of people in the organization who have different perceptions of who is playing the four roles, or steps, in the process. For example, someone who says, "Why do they ask for my opinion when they are only going to do what they want anyway?," has obviously felt discounted at one time or another. More specifically, the person has probably had an experience (or several) where he or she thought that their input on a particular issue was going to automatically be the decision (or at least the recommendation.) Where, in reality, his or her input was actually being solicited as part of the "analysis."

Other factors and issues are involved, as will be discussed further in this paper. But it is safe to say that frustration builds when peole have different perceptions of who is playing the four roles of the Decision Making Process.

GROUP DECISION MAKING METHODS

Although the 4-step Decision Making Model is essentially universal and is utilized in virtually all decisions, the way (or method) in which it is utilized may vary significantly. Likewise, the effectiveness of the Decision Making Process will vary significantly.

Using the appropriate Decision Making Method becomes particularly critical when groups of people are involved and will be affected by the decision. The "groups of people" may be families, Quality Circles, Governments (and those they represent), sports teams, committees, and so on. In each of those groups, the question of leadership arises, as do questions like:

* Who makes the final decision?
* On what issues?
* Who is the leader?
* What involvement does the rest of the group have?

This paper will explore eight Group Decision Making Methods. Each will be briefly defined and explained. Each method will also be "rated" in three different areas which represent the three key characteristics of all Decision Making Methods:

1) Likelihood for Commitment: This section will rate the method on how likely an affected group is to be supportive and committed to decisions made using this method.

2) Likelihood for Quality Decisions: This section will rate the method on the quality of decisions which will likely come from using it.

3) Likelihood for Expediency: This section will rate the method on how quickly decisions are typically made when using this method.

In addition, key advantages and disadvantages will be outlined for each method.

#1: THE EDICTIVE METHOD

"Issue a Proclamation"

In the Edictive Method, one person (or group) makes the decision virtually without input from the affected individuals. The decision is based solely on that person's own experience, knowledge and perspective.

Likelihood for Commitment: Generally low, unless the Decision Maker has exceptionally high credibility with the affected individuals.

Likelihood for Quality Decisions: Totally dependant on the ability of the Decision Maker to understand the particular issue. Depending on their expertise and the accuracy of the data they have, decisions may be very good, very bad, or anything in between.

Likelihood for Expediency; Generally high.

Advantages of Method #1

The Edictive Method tends to be the fastest of all Decision Making Methods. It is certainly appropriate to use when expediency of the decision far outweighs the need for support for the decision. (e.g. True crisis situations; physically threatening situations).

Disadvantages of Method #1

Decisions made using the Edictive Method tend to invite compliance rather than support and commitment. People tend to feel alienated and may even rebel against the decision (at least privately). Sometimes "toes" may be stepped on and people may feel discounted and disempowered. Decisions made using this method are sometimes difficult to implement. Depending on the competence of the Decision Maker, there is a higher risk of poor decisions when using this method. Long term, or wide spread use of this method in an organization can lead to an inhibiting of decision making throughout the organization and require that all decisions be made "at the top."

#2: THE COACH METHOD

"Access input and call the play"

In the Coach Method, one designated person accesses ideas and opinions from resources and the affected individuals. That person then makes the decision based on that input together with their own opinions, conscience and experience.

Likelihood for Commitment: Medium to high providing that the participants in the process understand that the ultimate decision will be made by the "coach", and providing they feel that their input was "heard and valued." Commitment can be low if the participants perceive the process to be one of Democracy or Consensus.

Likelihood for Quality Decisions: Medium to high providing the appropriate people and resources are accessed for input and that their input is objectively valued. Decision quality may be low if a "biased" sample of people are accessed for input or if that input is not effectively heard or understood.

Likelihood for Expediency: Generally medium, although it is somewhat dependant on the efficiency of the process used to access the input.

Advantages of Method #2

When using the Coach Method, people get to air their concerns, ideas and viewpoints. If the issue is discussed as a group, they also get to hear each other's ideas which can lead to new ideas (synergy). More viewpoints and perspectives on a given issue tend to make better decisions. Participants also tend to feel more invested in the process, hence supportive of the decision. Since there is a designated Decision Maker, or Coach, the participants do not need to come to a unanimous opinion or consensus. This can certainly save time in the process.

This method is particularly appropriate to use when a decision must be made relatively quickly, yet support for the decision is also important. Obviously, this method is also useful when the Decision Maker believes that a better decision will result from getting input from the affected people.

Disadvantages of Method #2
Most of the advantages of using this method can be negated by any one of a few critical mistakes in administering it. If the "Coach" is perceived as not being sincerely interested in the participant's input, most of the advantages of this method will be nullified and this method will take on most of the disadvantages of the Edictive Method. If it is not understood that the "Coach" will be the decision maker, the process can leave the participants feeling frustrated, discounted and unsupportive of the decision.

Even when this method is administered and understood well, participants may be left angry with the "Coach" or other participants if the decision does not go their way. The "Coach" may be misled by either dominating personalities or by a biased sample of people assumed to be representative of all affected people.

#3: THE DELEGATION (REPUBLIC) METHOD

"Chosen representatives representing the will of the people"

Both this method and the next have to do with utilizing representatives to make decisions which affect larger groups. These two methods are often used in combination with other methods. The representatives may use one type of method to access the input which they will carry to the decision making body. Then the decision making body will use some method to actually make the decision. Hence, these two "Republic" methods can actually be conduits between other methods.

The major difference between this method and the next is whether the representative is a delegate or a trustee. In this "Delegate" method, decisions are made by representatives who bring input from the groups they represent. The representatives serve as communication links between the decision making body and the groups they represent.

Likelihood for Commitment: Medium to high, especially if the Delegate is using effective methods to access the opinions of the group he or she represents, and the decision making body is likewise using effective decision making methods.

Likelihood for Quality Decisions: (Same as above)

Likelihood for Expediency: Generally low. "Delegates" generally need to communicate issues, status, and progress back and forth many times before resolution.

Advantages of Method #3
Properly administered, Republic Methods are good ways to keep large amounts of people involved in decision making without spending unreasonable amounts fo everyone's time. The Delegate (Republic) Method tends to force good two-way communication and allows different viewpoints to be expressed. Quality decisions tend to be made with a high degree of support when the process is effectively done.

Disadvantages of Method #3
Due to the amount of communication required for the Delegation Method, it tends to be slow. Since "Delegates" are compelled to represent their group, they may be representing a viewpoint with which they do not personally agree. This tends to impact the "Delegate's" effectiveness in the decision making body.

#4: THE TRUSTEESHIP (REPUBLIC) METHOD

"Representatives chosen out of philosophical agreement, respect and credibility."

In the "Trustee" Method, decisions are made by representatives who are chosen because of their philosophical stand and credibility with the group. They are empowered by the group to represent their needs and position based on their own personal conscience and perspective.

Likelihood for Commitment: Medium to high if the representative is truly philosophically "in sync" with those he or she represents. Can be low if that is not the case, or if the representative does not have high credibility with the group.

Likelihood for Quality Decisions: Can be anywhere from low to high depending on the representative's expertise on the given issue, as well as the effectiveness of the decision making method being used by the decision making body of representatives.

Likelihood for Expediency: Tends to be medium, and tends to be faster than the Delegate Method due to the fact that less "back and forth" communication is necessary.

Advantages of Method #4
Like the Delegate Method, this is a good way of representing the viewpoints of large amounts of people in decision making without tying up large amounts of people's time. This method can be particularly efficient and effective, but it does require that "trustees" exist within the different groups. The ultimate effectiveness of this method depends on each group having at least one person whom they can trust enough to speak for them and represent their issues to the point that they would trust and support the decisions made.

Disadvantages of Method #4
The main problem which can occur with this method is when the group perceives their representative as a "delegate,"

but the representative perceives themselves as a "trustee." Problems also occur when the representative deals with issues which he or she is not qualified. "Trustees" need to voluntarily turn themselves into "delegates" and seek input from their group when the issue warrants it.

#5: THE CONSENSUS METHOD

"General Agreement"

In the Consensus Method, the affected group debates, discusses and analyzes data and opinions until general agreement and "buy-in" is reached through compromise and concessions.

Likelihood for Commitment: Medium to high, especially if the process is facilitated well and all viewpoints are shared and valued.

Likelihood for Quality Decisions: Can range anywhere from low to high depending on the dynamics of the group and on how well the process is facilitated.

Likelihood for Expediency: Generally fairly low, especially if strong differences of opinion exist.

Advantages of Method #5
The Consensus Method can be an effective method and is certainly appropriate when support for the decision is important. Technically, everyone has a voice in the process and has the opportunity to share and defend their point of view. Decisions are typically easier to implement when this method is administered properly, and there is a higher likelihood of coming up with particularly creative solutions due to increased involvement and investment by the participants.

Disadvantages of Method #5
This method is not necessarily slow, but it certainly can be. Especially when serious disagreements exist, there may be a need for skilled facilitation and creative process design to bring the process to successful closure. Group dynamics tend to play a more critical role in this mehtod. Groups can be influenced by people who tend to be especially passionate or intimidating. Ideas from obnoxious or obstinate people may be discounted due to their ineffective ways of communicating them. Quiet or shy people may not be willing to share their ideas, no less stand up for them in debate. In addition, too many people may become involved in the process and the decision may become too watered down in order to appease everyone. Compromise does not always lead to good decisions.

#6: THE DEMOCRATIC METHOD

"Majority Rules"

In the Democratic Method, everyone involved or affected gets one vote. The option with the most votes, wins.

Likelihood for Commitment: Generally medium to high. At least 51% of the participants should be supportive providing there are only 2 options, the higher the possibility of generally lower commitment.

Likelihood for Quality Decisions: Can range anywhere from low to high depending mostly on the the level of understanding of the issue by the "voters."

Likelihood for Expediency: Generally ranges from low to medium depending on how much time is required to prepare the "voters" for the voting (Communicating the issue, educating, allowing debate, etc...).

Advantages of Method #6
Obviously, this method carries with it the advantage of allowing all affected people an equal vote in the decision. Where the Consensus method tends to allow certain people to be more powerful or influential, the quiet or less confident people have just as much ultimate "say" in the Democratic Method.

Disadvantages of Method #6
The "majority" is not always right. Poor decisions can be made if the voters are not effectively educated on the issue. "Voters" can also be influenced by other dynamics which have nothing to do with the actual issue (Personal issues, political ties, etc...). In addition, people who vote for the "losing" option, sometimes tend to never support the decision and, hence, may cause the decision to be difficult to implement and may even cause it to fail.

#7: THE UNANIMOUS METHOD

"Being of one mind"

In this method, the decision is not made until everyone involved is in agreement. In essence, everyone has a veto.

Likelihood for Commitment: Tends to very high. Theoretically, everyone is supportive.

Likelihood for Quality Decisions: Tends to be fairly high providing the group has the proper information on the issue and that knowledgable people are involved.

Likelihood for Expediency: Generally very low, especially if major differences of opinion exist.

Advantages of Method #7
Obviously, the decision should be very easy to implement since virtually everyone is in agreement. This method can be appropriate if the nature of the issue warrants complete support and commitment. And, if the need for that commitment far outweighs the need for expediency.

Disadvantages of Method #7
This method could literally take forever, resulting in a "non-decision." The process may take so long that circumstances of the issue may change along the way. The internal teamwork

of a group may be affected by unhealthy dynamics when using this method due to the pressure to make a decision (Pressing someone to change their mind, peer pressure, etc...).

#8: THE ANARCHIC METHOD

"Absence of order"

In this method, the direction from leadership is absent. Decisions are made by default based on precedent or not made at all.

Likelihood for Commitment: Tends to be fairly low and is often accompanied by feelings of frustration, apathy or cynicism.

Likelihood for Quality Decisions: Tends to be low unless the quality of procedures in place (which the decision will be defaulted to) are exceptionally high.

Likelihood for Expediency: Can be high if everyone understands that the situation is always handled the way it was yesterday. Can be low if that is not the case, and can also result in non decisions.

Advantages of Method #8

Defaulting to "how did we handle it before" is sometimes effective: If it worked before, maybe it will work again. A chaotic, anarchic organization can sometimes be a perfect environment for an extremely effective entrepreneur to be particularly impactful.

Disadvantages of Method #8

The Anarchic Method, as well as anarchic organizations, tend to be very reactive. Many decisions are made at the wrong level, by the wrong people, with insufficient information, or not made at all. Anarchic situations tend to be chaotic, frustrating, and not as effective or productive as they are capable of being.

CONCLUSION

There are several ways in which an organization can improve the overall effectiveness of its Decision Making structure and processes. While doing so, not only will productivity improve, but the likelihood for commitment, quality decisions and expediency of decisions will improve also. Here are a few suggestions on how to proceed:

1) An overview of the 4-step Decision Making Model and the eight Decision Making Methods can be effectively done in presentation form in 60 to 90 minutes. Exposing all members of a given organization (at every level) to these simple concepts is an important first step. This will build a baseline of information which people can refer to with each other and understand the terminology.

2) Invite all participants to assess issues, projects, and committees in which they are currently involved. Have them identify which Decision Making Method is currently in use, as well as who is currently in each of the 4 step model. Once that is done, it may be appropriate for each member of a given group to share their perceptions with each other. Obviously, some very interesting revelations can occur as well as the fact that the group may decide to alter the method to a more appropriate one. In any case, misperceptions in roles will be cleared up.

3) Invite people throughout the organization to consciously assess which method would be most effective, as well as who will be in the different positions, before a process is begun. Taking a few minutes in the planning stages of a project or before working a particular issue to address these concepts can have tremendous value. Then, of course, it is equally important to make sure the other participants in the process understand the method which will be utilized.

Strengthening the Decision Making processes of an organization in this fashion will certainly not be a cure-all for all of the organization's ills. Since many of the methods depend on a level of trust and of "valuing each other," organizations who have major deficiencies in these areas will still face decision making inefficiencies. However, any organization can certainly benefit from the implementation of these concepts and they will be particularly helpful within organizations who value "Employee Involvement."

BIOGRAPHY

Ron Brooks is the designer and Manager of Digital Equipment Corporation's VIA Program. Now in its third year, VIA (Volunteer in Action) is a Quality Circle Program utilizing Statistical Process Control techniques.

With 12 years of direct Manufacturing and Management experience, Ron personally facilitates several of the "VIA Teams" at the Digital-Albuquerque, New Mexico facility and manages the entire program and its evolution.

He is a recipient of the Digital TMG 1986 Leadership Award, and is becoming a well respected resource in the areas of Employee Involvement and Facilitation.

Quality Circles in a Data Processing Environment: Yes, it is Different

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There has been a lot of commotion over whether quality circles, existing primarily in manufacturing companies, can work in service organizations. In mid-1984 The Travelers implemented a quality circle program in their Data Processing Department. Using Decision Images, a personal computer presentation graphics software package, this presentation takes a look at the dp professional, their jobs, and the environment at The Travelers in which they work. It highlights what changes were necessary for the program to succeed with this breed of white collar worker, what the coordinators and the steering committee have learned, and what changes need to be considered to allow for continued success.

Introduction

What kind of picture is generated in your mind when you think of the typical data processing professional? Did you picture...

- a 25-30 year old hunched over a terminal in stylish clothing, a whole wheat bagel and carton of 100% natural juice of some sort on the desk, and a brightly-colored nylon gym bag on the floor.
- a bearded young man sitting at a terminal, seemingly oblivious to the world, wearing a slightly rumpled shirt open at the collar with no tie, sleeves rolled up, and a desk strewn with papers and half a dozen open computer manuals.
- a young person pouring over a computer printout, with a yellow highlighter in one hand and a can of Coke in the other, with papers arranged in neat little piles on their desks.

Does one of those describe what you thought of? Whatever you pictured, it was probably quite different from what you would think of if I asked you to picture the typical blue collar worker, who is the more often thought of participant in quality circles. Even though these people and their jobs are very different, they are similar in ways that are the basis for quality circles:

- they know their jobs better than anyone else
- they have ideas that they want to share on making their jobs better
- they want to improve their jobs

Since these are some of the key points that drive quality circles, why wouldn't they work in dp shops? Let's take a closer look at the profile of the data processing professional, their jobs, and the environment in which they work at The Travelers.

A Closer Look at the DP Professional

Obviously, not all dp professionals are alike. For the purposes of this presentation, however, I'm going to make some generalizations. I hope in doing so that I don't offend anyone.

First of all, dp professionals tend to be very analytic. Now, one might think that in a problem solving situation this would be a very positive trait, and it is, to a point. The ability to step back and look at the situation from many angles is certainly helpful. Also, being able to look at many possible solutions is another plus. The point at which being analytic causes difficulty is when it goes to the extreme. For example, many of our circles have spent months trying to decide which problem, out of the 60 - 160 that they brainstormed, to work on. The analytics in the group want to be absolutely sure that the problem they pick will have the greatest effect. There's nothing wrong with that, but while the others are concentrating on the problem, the analytics, in their minds, are going through the data collection, management acceptance, possible solutions, effects on the rest of the area/department, etc.

Another point of "extreme analyticalitis" is when the circle can't move out of data collection because some of the members (guess which ones) feel the need to collect yet more data. Some of the circles in data processing at The Travelers have experienced this. We can almost predict now, when we do circle member training, which circles will struggle with these situations.

Dp professionals also tend to be very technically oriented. They want to be on top of the latest technology and computer software. They deal well with concrete and logical things, and feel most comfortable with them. This doesn't really cause much difficulty in the circles, but a contrasting trait does. Generally, dp professionals are viewed as having a low level of interpersonal skills, such as listening, working in teams/collaboration, and conflict management. These are sometimes referred to as the "touchy feely" skills. Being so technically oriented, they don't spend much time developing and exercising them. This has made it difficult for some of the circles to handle group decision-making and dealing with conflict and personality issues when they arise. The initial impulse is to try and gloss over these things in hopes that they will resolve themselves because the people don't feel comfortable in dealing with them openly.

Dr. J. Daniel Cougar and Dr. Robert A. Zawacki of the University of Colorado have done a lot of research on dp professionals and written many articles on the subject. In their research they have shown that dp professionals have low social needs when compared to their counterparts in other areas of their firms. That seems to make sense when you think about it. How else would dp professionals be able to spend so much time in their jobs dealing with a terminal or personal computer as opposed to another human being?

You may disagree with Cougar and Zawacki on this point, as I did at first, since these people are volunteering to be part of a group. If you asked them why they volunteer, however, as we do, you would find that being part of a group is not one of their reasons. Most of them see the circle as a way to be heard, or as an opportunity to develop those skills to move up the career ladder. Cougar and Zawacki also state that facilitators typically have a high need for social interaction. That I agree with wholly. I know that as a facilitator, I see this as an opportunity to have that social interaction in a technical environment. I suspect a lot of our facilitators feel the same way.

Dp professionals also have a high need for recognition and feedback This may seem a little contradictory since these people are sometimes described as being very highly internally motivated. We find, however, in attitude surveys that dp people don't feel that they get enough feedback on their work. Part of this is due to the fact that they often are just working on one piece of a project and never feel part of the bigger picture. Often the projects they are working on are so long-term that they aren't even in the same unit when the projects are completed and implemented. Quality circles have made a big improvement in this area. By the team working on the whole project from beginning to end, the participants get feedback. They see the fruits of their labor. We also encourage them to meet with their management to get feedback on a regular basis. This encourages management to give opinions and support, and opens lines of communication. We also encourage management to ask how the circle is doing and show interest in a non-threatening, non-controlling manner, which a good portion of them do.

Data Processing Functions and the Environment at The Travelers

Since the jobs themselves and the environment in which they are performed are so closely related, these will be examined together, outlining their effect on the quality circle process.

The Data Processing Department, and the jobs within it at The Travelers are highly technical in nature. We have become known as a leading edge in technology and everyone in the department is very proud of that. Because of it, though, the technical environment is ever changing. We are constantly being given new software packages to use that are the "new" standard for the department. Also, less frequently, there is new hardware to get to know and use. This creates a lot of frustration for the people, since they really have no control over it and never feel they are on top of it. The quality circles are a very much needed relief to all this. In the circle, the members have control over the environment. There also aren't the deadline pressures. The quality circle helps them to cope with their regular job.

Most management personnel, from the first level supervisor on up, have personal computers on their desks, and use them daily. Their use has become a regular part of the job, as a calculator used to be to an actuary. For those non-management personnel, there is generally one personal computer for every two people. The dp quality circles have also adopted this technology to help with the running of their meetings, and the behind-the-scenes administrative work. Several circles have their meetings in teleconferencing rooms equipped with a personal computer and a video projection system. They use these tools in place of flip charts to record and display their ideas. By using spreadsheet software, they can easily prioritize and sort items, tally votes and create reports for the minutes as they are having their meetings.

Since everyone in the department has access to a personal computer, we require that the circles put their meeting minutes on our electronic mail system. This eliminates the paper, one of our department objectives, and makes it easy to distribute the minutes and other pertinent circle information to the necessary people. We, as coordinators, use this same electronic mail system as one way to keep in touch with all the circles. I stress that it's just one way to keep in touch with the circles because I don't want to give the impression that we're trying to replace personal contact with technology. We also use this mail system as a means for the circles to get other information to us, such as a monthly status report from each of the facilitators.

In addition, we have an online information system called FACTS (Fast Access Text System) that is available to anyone in the company. We use it to disseminate information on what circles are working on throughout the department. This way, if one circle is considering working on a particular issue, say documentation, they can search this system for other circles who have worked on documentation and talk to them about what they've done to avoid duplication of effort. This online system also allows non-quality circle people to search the system when they have a problem to resolve in their area to see if a circle has already solved it in another work unit.

Another tool most of the dp professionals at The Travelers are familiar with and use regularly is a presentation graphics package called Decision Images. Just about all presentations of any nature given in the department use this. It's just natural then, that the circles would use this for their management presentations. It's something that replaces the flipcharts and overhead transparencies. Keep in mind that these are all tools that these people use regularly in their jobs. They aren't things that were created just for quality circles. This is the environment these people work in.

One job characteristic that gives the circles some difficulty is that the positions are not really distinct. There is a lot of overlap. Therefore, if a circle is made up of people in different units, the jobs these people have could be very different even though they have the same job description and are at the same salary grade. Even within a single work unit, the jobs could be very different. Because of this, everyone may not share the same problems. This can make it very difficult to come to a concensus on what problem to tackle.

Most of the jobs in the department also have a need to interface and work very closely with many other areas. There is the need to interact with the unit's internal "customers", other departments, and various technical support units, just to name a few. This causes a couple of dilemmas. First, the fact that, as individuals, they have to interact causes difficulty because of their low level of interpersonal skills. Since we started quality circles in the department, however, we have seen a dramatic change in this. The units are learning how to talk to each other and improve this understanding of each other's jobs. They are also becoming more tolerant of others. The second problem is that it is sometimes difficult for the team to find a problem they want to work on that they have control over and can implement. So many of their tasks have a direct impact on other units, or the other units are directly involved in the task. We have to keep a close eye on some of these groups as they are selecting their problem to be sure that if they pick something that greatly affects another unit, they get the other unit involved from the beginning, before they make their final decision. This way we don't create more problems.

Another area of difficulty for the circles is that their jobs are far from routine and the people are faced with frequent emergencies. Many of them support realtime systems that are The Travelers bread and butter. This means that when one of these systems is in trouble, these people's first priority is to get it fixed. Sometimes this is not a trivial or speedy task. This often means their absence from a quality circle meeting. Attendance is something with which almost every one of our groups has struggled. When a team starts out, they have such high expectations and when everyone is not there, it eats away at those expectations. We try to make them aware, from the beginning, of some of these pitfalls to help prevent them from being devastated when they occur. Some of the groups handle this by setting up a backup meeting time so that if the regular meeting time is disrupted, people try to be free for the backup. Some of the other groups help combat this problem by meeting for two hours every other week at a time when these emergencies are less likely to occur.

Two other environmental factors that affect the circles negatively are the frequent reorganizations within the department and job postings and transfers. Nothing disrupts a group more than to have someone leave. It changes the dynamics of a group and leaves a feeling of loss. I'm sure a lot of you have experienced this in work or social groups. Data processing people, in general, tend to be more mobile in their jobs than a lot of other professions. We have an internal job posting program at The Travelers that allows people to change jobs if they have been in their present position more than six months. A lot of people take advantage of this, particularly in the Data Processing Department. When someone posts out of an area and is a member of a circle, they can remain in the circle under two conditions. First of all, the circle must have a desire for that person to remain. Secondly, that person's new management must give its consent for them to take the time to attend the meetings and other circle activities. We have seen this happen frequently. Most of the time, the people remain with the circle to the end of the cycle. Members tend to have a real commitment to what they are working on. I'm sure you see this in your circles as well.

Communications and feedback at all levels within the department is not always as we would like it to be. I'm sure that's not unique to The Travelers. We communicate electronically more and more. This makes it a little more difficult for the quality circle principles to take hold, since they are almost at the other end of the spectrum with their "warm and fuzzies". A lot of people in the department are not comfortable with those interpersonal skills at all and are perfectly content to communicate via a keyboard. We have seen this change considerably, though, since the onslaught of circles. We are finding a lot of people out there who are desperate to communicate, but don't know how. Quality circles give them the means.

How We Changed to Make it Work

I want to address now how we functioned when we started the program in data processing, the things that worked well, the things we changed that didn't work so well and where we are now.

The Beginning - December 1984

Types of Circles

We started with twelve circles in hand-picked areas of the department. They were traditional quality circles made up of programmers and analysts in the same work unit. In some of the circles, the manager of the people was also in the circle with the role of leader.

Training

The training for these initial circles was a package from an outside consultant developed for manufacturing companies. It was delivered by the consultant and a couple of people from our Management Services Division (basically in-house consultants).

- 5 days leader/facilitator training
- 3 days group dynamics training for facilitators
- 1/2 day management training (for circle members' immediate management)

Support

The program was placed under the Data Processing Training Unit. The officer in charge of that area acted as a part-time coordinator for the program. There was also a steering committee made up of officers and senior management of the department. Their charge was to set the policy and procedures.

Experiences

The consultant told us that it would take about six to nine months for the teams to complete a cycle. This was, of course, based on past experiences from primarily manufacturing companies. Three months after our circles got started, we realized that this just wasn't going to be the case with dp folks! Most of the circles had not yet selected a problem. They had brainstormed lists of anywhere between 60 and 160 possible problems and were in the process of narrowing that list down to the one problem they would tackle. This was the first realization of "analyticalitis". From here on in we started publicizing a time frame of a year to 18 months to complete the cycle.

Expansion I - June 1985

We took a long look at the first twelve circles in regard to the make-up of the circles, the training, the support provided, their effect on the department, the goals of the program, and made some changes as outlined below.

Types of circles

Twelve more circles were added. Since the unit circles seemed to improve things within a unit, we decided to try to achieve the same effect with units that worked together. Cross-unit circles were formed composed of representatives from one officer's area. Three of these twelve new circle were cross-divisional circles, made up of people from different work areas that had something in common in the jobs they perform. For example, a circle was formed with representatives from all the areas involved in new project development.

Training

Based on the reaction to the training from the first twelve circles, we made some major changes to our training.

- conducted in-house by the Data Processing Training Unit (with the idea that these people had a clearer understanding of the people being trained)
- most of the manufacturing examples were replaced with data processing ones
- 35mm slides used to teach the tools were replaced by PC graphics presentations given by experienced leaders and facilitators
- a panel of experienced leaders and facilitators was brought into the leader/facilitator training for a discussion of their experiences
- the management of the leaders and facilitators were invited to attend the class presentation on the last afternoon of leader/facilitator training
- the 3 day facilitator training was completely revamped to be more relevant to the department adding more role plays and experiences of situations that actually occurred in circles within the department
- several one to two hour seminars were developed for some of the more difficult stages in the cycle (problem selection, management presentation)
- two half-day member training sessions were developed to help get the circles started more quickly (equates to two months of one hour meetings)

Support

A full-time assistant coordinator and a half-time trainer were added to the staff.

Experiences

The response to the changes in the initial in-house training were fantastic. The students were able to grasp the concepts better having more relevant examples and case studies. Also, having current leaders and facilitators help out with the training worked very well. It made the training less of a burden for the trainers, as well as providing some "inside" information to the class. This goes for the panel of experienced leaders and facilitators as well. It helped to alleviate a lot of the anxieties of the students for their new roles.

We also decided that the original management "hands off" philosophy was not healthy and having the management come to the presentations at the end of the training proved to be a good vehicle for starting the management-circle relationship.

By providing the member training, we got a feel for the make-up of the circles. It also provided us a means of seeing things in action and bringing us closer to the actual process.

We also added two hour management training sessions, given about every two months, presenting the tools and techniques that the circles were using at that point, as they progressed through the circle cycle.

Expansion II - March 1986

Types of Circles

With this expansion, we decided to take our diversity in circles one step further to the ultimate, a mix of data processing people and their customers in other departments. We chose only those other departments that had implemented quality circles so that the management would at least be familiar with the concept and the benefits. We also had more single unit circles and a remote programming site circle. We decided with this expansion that we would let the circles decide who would be the leader and how they wanted to do the selection.

Training

We didn't make a lot of changes to the training this time. We decided that it worked so well the last time we wouldn't tamper with it too much. We did make a couple of changes, though.

- the case study for the team project was changed to be a data processing case (four different ones were created to avoid duplication)
- training was provided on PC graphics software so that the teams could use this tool in their class presentations

Support

The quality circle program was now made a separate entity within the Human Resources and Support area. With that change, the assistant coordinator became the full-time coordinator and the half-time trainer became the assistant coordinator. The staff now consisted of two people, a coordinator and an assistant coordinator. We were now up to 36 circles.

Experiences

The leader/facilitator training for this expansion proved to be very trying. We don't have a definite reason for this. The only thing that we could figure was that there were several people who were experienced members of circles who were being trained as either leaders or facilitators in the class and this took some of the discovery out of the class. The feedback from the class was quite typically good, however. We just didn't feel comfortable with it.

At about this point, we started having difficulty with our cross-divisional circles. We spent a lot of time analyzing this with the facilitators and also with the steering committee and finally came to the conclusion that it was due to the circle's inability to implement anything on which they chose to work. Most of the problems were out of their scope for implementation. We solved this dilemma by appointing a senior staff member to act as a sponsor for these circles. This gave a little more clout to the teams and has worked out quite well.

Due to the number of circles, we started developing some tools to help us handle the number of people we were now supporting. The electronic mail system mentioned earlier has proven to be one of the most useful tools for dealing with all these people. We can get information out to all the leaders and facilitators quite easily. It's used for more than just sending messages. We can send out full memos and other documents of various lengths (within reason).

We are also developing a data base to keep track of members, management, problems selected, what special skills a leader or facilitator might have, etc. By having this information we can easily put together lists for management training, scan the types of problems circles are working on, refer leaders and facilitators to others with similar problems, etc. We keep thinking of more and more uses for this data.

Another tool that we found useful is a file that we use to keep track of circle progress. We note when minutes are received and if we haven't heard from a circle in a couple of weeks, we give them a call. We also rate the circles on how well we think they are progressing, or their internal "health". On a scale of 1-10, 7 is an average score. We can do a quick scan of this file and any circles that have a rating lower than 7, we give a call. We also have the leader and facilitator rate the circles monthly. If our rating and theirs is very different, we try to find out more of what is happening in their meetings.

Expansion III - October 1986

Types of Circles

With this expansion of nine circles we tried to include those areas in the department where recruitment for circles had not yet taken place. We included the newest remote programming site in Cherry Hill, New Jersey. We started two circles in our data center in Georgia and another one on second shift in our data center in Hartford.

Training

We made quite a few changes to the training this time around again. Most of what we did was to add a lot of things from various seminars that we had attended and pulled from a lot of the materials we had been gathering from other sources on topics such as leadership skills, coaching, and handling conflict. We added a numerous class activities on these topics. Most of the exercises were interactive, such as role plays and small group discussion of case studies.

We beefed up the data collection section as well. It had been one area of frustration for many teams. Most of them have been doing surveys and interviews so we put together some samples of what they had done, along with an article found by one of the circles on how to put together a survey.

We also changed how some of the class exercises were presented. Instead of having real specific directions, almost forcing the results that we wanted, we made several of the exercises more open-ended, allowing the teams to do more thinking on their own.

Support

The staff has remained the same through this expansion.

Experiences

The training went extremely well this time. By not being so specific in some of the class exercises, the teams developed an incredible level of creativity. It was amazing to hear the lengths to which some of them went in their sizing up of a situation. The class of leaders and facilitators also seemed to be much less anxious about their new roles. The only explanation that we have for that is we have a lot more experience to draw on now and are putting a lot of that into the class. Along that line, we added circle members to our panel of experienced leaders and facilitators. This worked out very well in that the class could see circles from different perspectives.

Looking at all of the circles, through all of the expansions, one thing that is common is the types of problems on which they choose to work. Communication, documentation, career planning and counselling, and management training are the top four problems listed. One or more of these show up on every brainstormed list. This is an indication of where the people in data processing are coming. They are the factors in the job that these people see as most important. They are a group of professionals who want to be well-informed. They want more out of their jobs than just a paycheck. They want to know about their career opportunities. They want to be trained in the tools to effectively manage people. By solving some of these issues in their areas, the circles are having a very positive influence on the culture in the department.

Our Goal and Changes That are Going to be Necessary in the Future

Our department goal for the program is to give everyone who wants to be involved in a circle the opportunity to do so. In our department of 3,000 people in 40 locations, there are some changes that will be necessary in order for that to happen.

By no means do we think we have the perfect program. We don't do the absolute best training ever done or monitor the program the best way possible. The reason I say this is because the one thing we have learned is that the program requires constant nurturing and modification as the people, the department, and the culture of The Travelers change.

Areas that will need some change, as well as we can predict, are those same areas that have changed with each expansion. One of these areas is recruiting. Certainly, if we want to reach all those who want to be involved in our department of 3,000, we're going to have to do it at a rate of more than 200 people a year, which is roughly what we're doing now. We can't have just two people doing the recruiting. That would be all they do. We hope to establish representatives in each of the divisions within the department to help us with this.

We will also have to change the way we do the training, or again, all we would be doing is training. We haven't thought an awful lot about this aspect, however.

We could probably still use our electronic communications tools for getting information out to all the circles, but we wouldn't be able to monitor all the minutes from 300 circles a week. This is possibly another job for the division representatives.

It would also be a little difficult to have monthly meetings of all the leaders and facilitators. We see this as a problem now with about 86 people. We have started breaking these meetings down in size by grouping the leaders and facilitators by where their circles are in the circle cycle. This way we can address their more urgent needs. We don't have enough experience in this yet to determine if it is going to be successful or not.

We also see a need to get middle management more involved. By middle management, I'm referring to the first couple of management levels in the organization. The teams need encouragement by their supervisors to feel that their being on a quality circle is part of their job, not something extra. I think this will start to happen as more and more circles complete the cycle and the results get more publicity.

In general, we see our greatest change coming in dealing with the numbers of people involved and we see our answer as decentralizing the support. This way we can also make it the way we do business, and not a special program.

Summary

Hopefully, others who have been thinking about starting a quality circle program in their white collar companies and more technical departments will have gained some insight as to how to proceed, what kinds of problems they may encounter, and how to resolve some of those problems. After all, as stated in the introduction, when you come right down to basics, people everywhere have certain common traits. The fact that they are in different jobs and types of work might change their approach to a situation, but the desired result is the same, and that's a key factor in its success.

BIOGRAPHICAL INFORMATION

Tom Evans is a manager in the Human Resources Division of the Data Processing Department at The Travelers in Hartford, Connecticut. He started his career with The Travelers in 1976 as a computer programmer. Since that time he has worked as a systems programmer, user liaison in the Information Center, and an instructor for the Data Processing Training Unit. He has presented technical topics at GUIDE International, a conference of users of IBM hardware and software, and ADAPT, the Association of Data Processing Trainers. He is currently the assistant coordinator for the quality circle program in the Data Processing Department. He develops and delivers the training for the circle leaders, facilitators, members, and management within the department, and also facilitates three circles.

New Experiences in Managing Conflict

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Conflict is an integral part of every organization. Circle Leaders, Members, Facilitators and Supervisors must learn to deal with it constructively.

Conflict can serve as an energizer to the organization because it helps mobilize resources. The resolution of conflict has the potential for producing some very positive outcomes.

The role of the Circle Members and the Leader in creatively managing conflict will be covered. This will ensure that the Circle Members will see conflict as a positive energizing source. By learning to handle conflict constructively, the Circle will increase the quality of their output.

INTRODUCTION

Conflict is usually seen by Quality Circles and problem solving groups (and dictionary compilers) as not only negative, but as something to be avoided or at least suppressed.

To understand conflict it is necessary to know how the Circle Leader and Members consider conflict. When it is managed well, conflict can be highly constructive and wield positive influence on the Circle and the organization. On the other hand, mismanaged conflict can produce negative outcomes. It can be destructive, causing harm to the Circle Members or to the organization.

If conflict is to serve as an energizer to the Circle Members there are creative activities they should be encouraged to use in order to increase their chances of making sound and well-considered decisions.

In a Circle or in any group conflict is inevitable. Why? Because the different people have different points of view, different perceptions. Within the larger context of work groups or functional organizations the same thing happens. The members see the needs of the overall organization differently because of their different job orientations.

For example, the Manufacturing Manager and the Sales Manager have different jobs. The Sales Manager wants large inventories and many different models so the sales people can provide fast delivery and a large choice to the buyers. The Manufacturing Manager, on the other hand, wants low inventories and one model so that money will not be tied up in material, inventory and storage space and production schedules and set up are simplified. Management must find a way to productively and constructively handle the differences and resolve the conflict between manufacturing and sales.

Your church organization may be facing conflict. Perhaps some members of your congregation think the church should only be concerned with the spiritual needs of the people. Other members may want your church to focus on aiding the poor around the world. Your priest or minister is caught in the middle and along with the parish council or vestry must resolve this conflict.

How about the group that should be most concerned with mutual help and love - the family. Is your marriage free from conflict?

Since most conflict is natural the goal of the Circle is not to eliminate or suppress conflict, but to look at it as an essentially healthy process. Conflict can be healthy if it is managed and resolved in a creative and constructive manner. The Circle process is enhanced by exploring the differences that arise. New ideas and new learnings for the Circle Members are the result. Circle Members are stimulated to be more creative. By considering all the alternatives, quality ideas come out and a better course of action is the result.

DEFINING CONFLICT

If you have ever wondered why conflict is usually seen by Quality Circles as negative and something to be avoided or at least suppressed, it is necessary to look at our concepts of conflict.

Webster's New World Dictionary (1982) defines conflict as "to be antagonistic, incompatible,...a fight or war,...sharp disagreements, as of interests or ideas,...emotional disturbance."

Roget's Pocket Thesaurus lists synonyms for conflict as disagreement, opposition, contention and warfare.

A Thesaurus in Dictionary Form has the following synonyms for conflict: "battle, combat, strife, fight, encounter, clash, collision, struggle, discord, antagonism, dissension, hostility. See contention, disagreement, opposition, warfare."

At a recent workshop participants were asked to define conflict. Some of their definitions were: "difference of opinion, different objectives, different values, misunderstanding, opposing forces, someone wins-someone loses, miscommunication."

What do all these "definitions" suggest? First of all, there is the implication that conflict is bad. This negativeness associated with conflict too often causes us to suppress or deny the conflict and keeps us from trying to manage conflict. A Circle that manages conflict in a creative constructive way will not only make sound decisions, but will enhance their pride in their accomplishments.

ENCOURAGING CONFLICT

The goal of the Quality Circle Process is to define opportunities and reach consensus on their solution. This means that the views of all the Circle Members must be heard and considered fairly. Criteria must be agreed upon to evaluate these ideas for implementation. As all these views are expressed, conflict is a natural and necessary by-product of this process.

The Circle Members have different backgrounds and experiences and as a result will have different views regarding how to best resolve the conflict. Only when all these viewpoints are considered in an atmosphere that promotes and encourages this openness to conflict, will the truly best solution be implemented. Without this encouragement an uncommitted, mediocre decision will be made by the Circle.

Creative Aspects

It is only through the encouragement of conflict and the resulting disagreements that the Circle Members can develop a large number of creative solutions from which to make their choices. Premature closure at any step in the creative process will drastically reduce the number of alternatives for resolving the conflict. Smoothing over any disagreements (nice people don't fight) is not likely to provide a number of quality alternatives from which to select a quality solution.

One of the functions of disagreement is that through it alternatives are provided. When a Circle does not stifle disagreements Circle Members develop more possible solutions. Likewise no disagreements will result in no alternatives, at least no quality alternatives.

Quality alternatives are needed by the Circle in its creative decision making process. Only by discussing and evaluating these alternatives in an open-minded way can the Circle Members arrive at a sound decision. This sound decision will only occur when constructive conflict has been accepted as a way of life in the Circle creative process.

Quantity leads to quality. The more alternatives the Circle Members are able to develop the greater their chances of arriving at the quality resolution of the particular conflict. Creativity within the Circle will thrive on constructive conflict. Creative energies are directed in a positive way toward resolution. Circle Members are thinking more creatively as they work toward the quality decision.

Circle Interaction

Healthy interaction is encouraged by constructive conflict within the Circle Process. It will serve to stimulate the Members' interest, not only in the Circle, but in the shared conflict as well. There is a free and open atmosphere for Member discussion. This atmosphere provides for more involvement by each of the Circle Members. The more vigorous and noncombative the discussion, the larger the number of quality alternatives from which to choose.

By seriously following the rules of brainstorming, particularly the defer criticism rule, Circle Members will not be critical of their own ideas or the ideas of others. Not being afraid someone will laugh at or criticize your ideas gives you the confidence you need to produce lots of ideas.

Circle Understanding

The paradox of conflict is that in resolving conflict, conflict should be encouraged. This allows for the different experiences, opinions, and perceptions of the Circle Members to be heard. This will broaden the Circle's understanding of the conflict.

It is only when thoughts and ideas are encouraged from every Circle Member that the Circle can hope to really understand the conflict. This is an important part of the creative process. If Circle Members ever hope to resolve conflict it is a necessary part of the creative process.

MANAGING CONFLICT

Circle Members should not be concerned with extinguishing conflict, but looking for ways to manage it more effectively. Conflict is an integral part of every organization and Quality Circle Leaders, Members and Facilitators must learn to deal with it. Conflict can be destructive, causing harm to the Circle Members or to the organization as a whole. Conflict can also be constructive and wield positive influence on the Circle and on the organization.

There are many people who think that all conflict in organizations should be avoided. They feel that its very existence is interpreted as a sign of weakness in the organization or that allowing conflict might disrupt working relations between employees and hinder performance.

The behavioral scientists not only agree that conflict is natural and inevitable in any group, but that it can be a positive force in the performance of the organization. In fact, some behavioralists feel that a certain amount of conflict - of the right kind - is required to keep the groups dynamically competitive and responsive to the needs for innovation and change.

Conflict can be constructive or destructive to the functioning of the Circle or organization depending on its level - too much or too little. The optimum level of conflict is such that creativity is stimulated and change is easier to initiate thus reducing stress and preventing Circle inaction. However, it is not so much as to be destructive. At the extremes of no conflict and high conflict Circle performance is reduced. There is a level between these two extremes which will have a positive effect on Circle productivity.

The ability to deal with conflict in a skillful manner is an important one for the Quality Circle Leader, Member and Facilitator. Disruptive or mismanaged conflict will provide negative outcomes because it starts from a win/lose viewpoint that often goes to lose/lose where nobody wins.

DISRUPTIVE/MISMANAGED CONFLICT

Disruptive conflict occurs when there is lack of understanding of the value of conflict by the Circle Members. As a result, they do not use a positive approach to managing conflict. Since Members perceive this as a situation where "I win and you lose" a competitive atmosphere develops.

In such a competitive climate the goal, if there is one, is soon forgotten as Members rush about attacking all other ideas but their own. Whatever team spirit the Circle had is soon dissipated as Members try to get their own way rather than trying to find the best solution for the situation. Circle Members become so locked into the value of their own ideas that they're unable to see the worth of the ideas of other members.

Some members may react aggressively with hostile, mean or angry behavior. This is expressed by verbal, physical or other forms of attack. Usually such attacks focus on personalities rather than on issues or ideas. Other Members may hold back and refrain from participating. Still others may withdraw - either by physically leaving or being absent mentally while still being there. Sometimes reality is distorted and members blame each other or management for the disruption.

Mismanaged conflict can cause other undesirable situations for the Circle. Members may form small subgroups or cliques within the Circle. Since Member distrust and hostility are high there will be little, if any, attempt by them to understand each others' ideas, opinions or motives. Since everyone is out for themselves or their own little subgroup, no one is willing to shift their position. This kind of climate creates deadlocks making it difficult to arrive at any agreed upon solution. As a result there will be little satisfaction and virtually no commitment by the Members for any decision, if and when it is reached.

Disruptive conflict can destroy the effectiveness of a Quality Circle. It leads to nothing positive. Disruptive conflict should be avoided because of its negative nature and negative results.

CONSTRUCTIVE/INTEGRATIVE CONFLICT

For constructive conflict to develop the Circle Members must realize and understand that disagreement is a natural part of the Circle process. In addition they will have to learn methods of managing conflict in an effective way.

Understanding that disagreement is natural does not block the view of the Circle goal of resolving the conflict. Circle Members can get more involved in the creative process. They learn that by sharing in discussing ideas they will arrive at a synergistic solution - the Circle solution being better than any one member's. Now there is commitment of the Circle goal and sincere team work leading to high team spirit.

Circle Members become more supportive of each other's ideas. Trust is high so everyone is more open to the ideas, opinions and motives of the other person. Members are more cooperative toward one another. Disagreements are now confined to the ideas or issues rather than to personalities.

Arriving at a sound resolution of the conflict Members will find a more cohesive Circle. It was a learning experience in that they found they can trust each other to be open minded and fair. Now there will be a high degree of satisfaction and total commitment by the Members for their decisions.

Constructive conflict can improve the effectiveness of a Quality Circle. It leads to positive results. Not only are conflicts resolved, but Circle maturity is fostered. This in turn increases capabilities and skills for resolving future conflict.

DEALING WITH CONFLICT

Dealing with conflict is a learned behavior and there are many different approaches to conflict management. There are, however, five common ways of dealing with Circle and organizational conflict. Naturally any one of these methods of dealing with conflict will not work in all situations or with all people. The Circle Leader must carefully consider what style to use, when to use that style and with whom to use it. Within the Circle new ideas and new learnings come from exploring differences. By dealing with the conflict in an open manner the Circle Members are stimulated to be more creative. This means better ideas, the development of higher quality alternatives and a more satisfying committed end result.

Compromise

This method of combining a little bit of winning with a little bit of losing is so common that compromise is often regarded as a virtue. Since we will be meeting halfway I have to give a little and you have to give a little. The net result is that we both come in with inflated positions to keep out losses down. The compromise solution is ineffective because it has been watered down and weakened through playing both ends against the middle. There is not real commitment by those involved because of limited goal achievement. When there is competition for limited resources compromise may be a useful approach. No organization has all of the resources (manpower, machines, methods, materials, money, time) to accomplish everything the members want to do. It may also be useful when we want to prevent a win/lose situation from going to lose/lose.

Denial

By denying the conflict exists the Circle Members think they have gotten rid of it. Not only do they withdraw physically, but psychologically as well. Conflict never goes away if left alone. Conflict grows and it usually grows to the point where it is unwieldy and virtually unmanageable. This style results in compliance without commitment on the part of the Circle Members. However, when the issue is not critical and time is not a factor, denial may be a way of dealing with the conflict.

Power

When the goal is to overcome one's adversary, power is used to resolve the conflict. The conflict situation is viewed as having one of two possible outcomes - winning and losing. The source of the power may be the result of one's authority or position - the Circle Leader, supervision. Power may also take the form of a majority - resulting from voting - or a very persuasive minority. Using the power strategy results in winners and losers. Losers, of course, don't support the decision in the same way the winners do. This win/lose situation often forces the conflict underground.

Situations "resolved" through the use of power have a habit of surfacing at subsequent Circle meetings to be "resolved" again and again. In the short term this strategy is very quick. It may be a useful approach when the other forms of handling conflict are not appropriate. Also where the conflict is not that important or the Circle Leader is perceived to know best this can be a good strategy.

Suppression

This is the "nice people don't fight" syndrome. Genuine differences are never worked through. A Circle Leader, using this strategy, will play down these differences. Neither do they recognize the effective results from handling conflict in an open manner. The conflict doesn't go away. This has been called a yield/lose style. Other Members of the Circle are appeased by ignoring, denying or otherwise avoiding conflict. The feeling being the relationship can't stand the shock of working through the differences. However, when the Circle Leader feels that it is more important to preserve the relationship than to deal with a less than significant issue through conflict, suppression may be used.

Integration

This is a synergistic strategy which makes use of the creative process. All parties to the conflict are involved and everyone recognizes the abilities and expertise of the other. Circle Members recognize that working through the differences will lead to a more creative solution of the conflict than could be achieved by any one person. Rather than trying to defend individual positions, Circle Members will be trying to resolve the conflict at hand. Because this is a win/win strategy Circle Members know that they all will profit from effectively resolving the conflict. Circle Members come into the conflict ready to modify their views as the best of their thinking emerges. Members know their efforts as a Circle will exceed the sum of their individual contributions. This method takes time, but it is worth it.

WIN/WIN RESOLUTION OF CONFLICT

The creative process provides a workable, systematic approach to dealing with the challenges and opportunities Circle Members face at work and in their everyday lives. It is an approach that can be consciously learned by practice. As you practice and reflect on the creative process it will become easier to take on challenges and conflicts of increasing complexity and difficulty. Understanding the steps in the process and learning to keep the process moving are the keys to effective conflict resolution.

The goal of the creative process is to arrive at a solution acceptable to all the Circle Members, so no one feels a loser. It's use will increase the capacity of Members to develop new and innovative solutions and that is important to resolving conflicts constructively.

DISCOVERING CHALLENGES

This is the stage in the creative process where there is sensitivity that a situation exists that the Circle Members want to change. The circle is looking to discover the conflicts that may exist in their work area. The Circle Members want to do something about the conflict situation. At this point the Members may not know what they want to do or perhaps they only have a general idea what the conflict is they want to resolve. Sometimes this step in the creative process is viewed as dealing with a "fuzzy mess."

Being sensitive to challenges puts the Circle in the driver's seat. Members will find they are better able to change from reacting to conflict to pro-acting to conflict. The Circle Members will learn to spot conflicts while they are small and can be dealt with not only more easily, but more effectively.

DISCOVERING FACTS AND DATA

In this step the Circle Members are looking for facts and data relevant to the conflict. The Members will need to go beyond the obvious facts and data which come out easily and quickly. They will have to stretch and look deeper. The facts and data help the Circle Members dignify the "mess" and call it a conflict. This step prepares the Members for defining the conflict more precisely.

Using the 5 W's and 1 H, the Circle Members write down what is known about the broad challenging conflict that has been selected. Then using the 5 W's and 1 H again the Members will ask what they need to know about the conflict. What other facts and data would they like to have about the situation?

DEFINING THE OPPORTUNITY

This is not a search for solutions, but for new ways to view the conflict. Using the "fuzzy mess" situations and the facts will provide the Circle Members with the basis for developing the initial opportunity statements.

Within the broad general challenges will be the opportunity subsets in this domain. The more the Circle Members understand the larger domain the easier it is to find the opportunities. Look for the opportunities/conflicts that are important to the Circle.

State the opportunity/conflict in question form to help find the right one. Use the statement "In What Ways Might We...?" (IWWMW...?). Your opportunity statement should be expressed in such a way that it does not signify judgement or blame. Following the rules of brainstorming Circle Members must make sure they generate and not evaluate.

One way to get more "In What Ways Might We...?" opportunity/conflict statements is to ask questions. To broaden the statement ask "Why?" To get more sub-statements or narrow the conflict statements ask "How?" The Circle Members are looking for a new sensitivity or a new context in which to see the conflict.

When defining opportunities/conflicts for creative attack the Circle Members should be able to recognize the real conflict. What is the essence of the difficulties underlying the conflict. The goal at this step is to find the conflict statement which, if the Circle resolved it, would clear up the "mess."

This step in the creative process is the starting point for generating ideas for solving the conflict. It involves choosing the statement that best captures the essence of the conflict situation. What emerges is the conflict statement that appears to be the most important one that the Circle Members should consider at this time.

FINDING IDEAS

Now the Circle Members put the brainstorming rules to the test. They must be positive to new ideas. Members will be looking for as many ideas as possible for solving the conflict they selected.

The Circle conflict statement should already be stated in the form of "In What Ways Might We...?" Now the Circle Members will stretch for a long quality list of ideas for solving the selected conflict. The more alternatives the Circle Members come up with for consideration the more workable and feasible the solution will be and the greater the probability of success in resolving the conflict.

If the Circle Members are serious about following the defer criticism rule they will not be too critical of their own ideas or the ideas of others. Not being afraid someone will laugh at or criticize their ideas gives Circle Members the confidence they need to produce lots of ideas. The Circle should not be looking for the best idea, they should be looking for 100 ideas.

FINDING THE SOLUTION(S)

Now the circle Members will develop the criteria that are most appropriate and relevant for evaluating the ideas. These are the criteria that will help them determine the strengths and weaknesses of each of the ideas.

Criteria will include such things as costs, time to implement, the individuals or groups affected, difficulties in implementation and moral, legal and ethical considerations. The potential solutions (ideas) are evaluated against the defined criteria that are important to the Circle.

By setting up a grid the Circle Members can evaluate all the ideas under consideration. Using a grid and a simple number system to evaluate ideas will give an objective picture of each idea's potential.

The number system might consist of 5 for excellent, 4 for very good, 3 for good, 2 for poor and 1 for very poor. The Circle Members will select the most promising idea(s) based on the evaluation against the criteria. The idea(s) with the highest total score become the proposed solution.

PUTTING THE IDEA(S) INTO EFFECT

Gaining acceptance of the idea(s) to resolve the conflict takes place before implementation. At this step the Circle Members are coming up with ways to implement the proposed solution. In addition, they will develop ways to overcome any obstacles and resistance to the proposal to resolve the conflict.

The Members of the Circle will be working with the idea(s) that scored highest on the criteria evaluation worksheet and will be developing ways to put the best idea(s) into effect. They will brainstorm ways to implement the proposed solution and overcome obstacles, concerns and resistance. Unless Circle Members act on their ideas, nothing will happen.

PLANNING FOR CREATIVE ACTION

Circle Members now devise a step-by-step plan of action so that the solution to the conflict is assured of being put into effect. This phase of the creative process results in success. Until an idea is put into effect, nothing is gained.

The Circle Members will need to plan for the things that have to happen as they go from the conflict solution to implementation. They will need to define the steps in the plan of action. What will be done first? Then what will be done next? And so on.

The plan is arranged for implementation and put into action. Included in step form are the things that need to be done first, second, etc. Now dates and times are included for each of the steps indicating when that step will be started and completed.

The creative action plan will show the things that have to happen as the Circle goes from the conflict solution to implementation. Circle Members will need to consider what could go wrong. For each risk a plan of action should be developed.

What can the Circle Members do to prevent the conflict from arising again? What can be done if this conflict does arise? Instead of going through the fix, refix cycle the Circle should make sure the conflict is resolved forever.

What will have to happen to tell the Circle Members that their solution has resolved the conflict? Has the conflict ceased to exist? Periodically the Circle needs to verify the results. Did the expected results occur? Then take action to get back on track.

Using the creative process will stimulate the flow of ideas and relationships that will lead to the quality resolution of conflict. Moving through the creative process Circle Members will be able to effectively resolve their challenges and conflicts. Creative energies are kept on track as mental abilities are focused at each step in the process. This increases idea production and produces more effective results for the Circle Members and the organization.

CREATIVELY MANAGING CONFLICT

A couple of simulation exercises will serve to show how the creative process can be used to constructively resolve conflict in a win/win way.

Example 1

One exercise is called "Win as Much as You Can" and has been modified from a Handbook of Structured Experiences for Human Relations Training, Volume II, Pfeiffer and Jones, University Associates.

In the exercise four teams - Manufacturing, Marketing, Finance, Engineering - make up the company. Each team is given 3 different colored chips. For ten rounds each team chooses a chip. There are rewards and penalties for each round based upon the pattern of choices made by all the teams.

This is a point accumulation exercise. The objective is to accumulate the most positive points possible. No distinction is made as to whether "Win as Much as You Can" refers to the individual teams or the company as a whole. The exercise is a good example of organizational parochialism. It gets the Circle Members thinking about having to break down the organizational walls affecting their projects.

Scores are calculated at the end of the final round. Unless the teams start to resolve their conflict in a constructive manner by cooperating and trusting each other, rarely will the company make a profit even though one or two of the teams are profitable. This loss experienced by the other teams is usually so large that there is not an overall profit.

This exercise illustrates the impact of win/lose situations as well as the benefits of an integrative approach to resolving conflict -vs- a competitive approach.

Discussion can center around what does "Win as Much as You Can" mean, the effect of competition -vs- integration and the relationship of this experience to other group situations. The concepts of win/lose, lose/lose and win/win strategies can also be discussed.

The next step is to take the Circle through this exercise using the creative process to win/win resolve conflict. This step can be done before or after the discussion.

Using the Creative Process

Discovering Challenges - the "fuzzy mess"

- Accumulate positive points
- We -vs- them
- Work together

Discovering Facts/Data - what is known

- Point accumulation exercise
- Win as much as you can
- Accumulate the most positive points
- 10 rounds
- Choose blue, white or red chips
- Rewards and penalties
- Rounds 5 and 8 are bonus rounds
- Negotiation at the end of rounds 4 and 7

Defining the Opportunity - different ways of viewing the conflict

- What is the real opportunity?
- Who is to win as much as they can?

Finding Ideas - that might solve the conflict

- How do we all win?
- In what ways might we all win?

Finding the Solution(s) - select the best idea(s)

- Convince the other teams that there is only one way we can all win
- Negotiate after rounds 4 and 7 in good faith
- Be honest

Putting the Idea(s) Into Effect - put the best idea(s) to use

- Trust
- Cooperation
- Honesty

Planning for Creative Action

- Each team play as they agreed

Follow-up after round 5 to determine if each team is playing in a win/win manner
Continue to work toward the win/win strategy

If the Circle Members have a tolerance for conflict and are willing to "clear the air" they will be much more effective. At each step in the process if differences are encouraged and worked through the end result will reflect the contributions of all the Members.

Example 2

The manufacturing and sales organizations in many companies are often in conflict. The sales department wants features that will make the product attractive to customers and potential customers. Such things might be artistic or elegant designs, customized features for each buyer, immediate delivery, many designs and frequent model changes.

In contrast manufacturing wants features that will facilitate the flow through the plant. These might be designs that are easy and inexpensive to build, long production runs on each product rather than customized orders, low finished goods inventory, standardized products and a stable product line.

Contrary to what many people believe, conflicts or disagreements will not go away of their own accord. If the sales and manufacturing organizations do not resolve these conflicts they will still remain, festering below the surface just waiting for the least opportune moment to burst forth. In the meantime the sales and manufacturing people will have had time to add to their assumptions and selective perceptions about the conflict. By delaying confrontation the conflict will now surface with even greater intensity and confusion.

Instead of being afraid of conflict look at it as a natural part of the Circle and management process with potential for Member learning and motivation.

A simulation is set up where the sales and manufacturing organizations are in conflict. The factory can't keep up with the orders that for some reason are saved up and turned in at the first of the month. The sales people claim they can't be bothered with paperwork if they are to aggressively pursue the customers. Sometimes orders are not reported until the first of the next month so the sales people can have more even monthly checks (Sales people work on commission).

The case is further embellished by how the people in the two organizations feel about each other. Sales views manufacturing as dirty people in shop coats who make a good product, but are slow and can't be counted on to get the product out. Sales thinks the chairman of the company prefers them to manufacturing because at the company dinner the sales people were seated nearer to the head table. Manufacturing views sales people as snobs, making big money on a product that is easy to sell and drive all over the country in a big company car. Manufacturing thinks the chairman prefers them to sales because at the company dinner the manufacturing people were seated nearer to the food and got to eat first.

Two teams are formed (manufacturing and sales) who face each other and enter into a dialogue. Discussion centers around how they see themselves and how they see each other. After a period of time the teams are led into a discussion as to how they can improve their relationships and what they can do to improve the customer deliveries and the company's competitive position.

Using the Creative Process

Discovering Challenges

- Poor communication
- Lack of understanding
- Manufacturing -vs- Sales
- Interpersonal relations
- Ordering/building process

Discovering Facts/Data

- Quality product
- Skilled craftsmen
- Behind in orders
- Sales holds orders
- Company car for sales people
- No/low orders at end of month
- Sales on commission paid monthly

Defining the Opportunity

In What Ways Might We...?

- Increase production
- Increase sales
- Increase productivity
- Do better planning
- Keep overhead down
- Keep costs down
- Level production
- Level income

It is at this point the teams start to see the interrelationships between the two organizations and the cooperation that will be necessary to resolve the conflict. If the peaks and valleys are removed from the order input and build process, something must be done to eliminate the feast and famine associated with high and low sales months.

Discussion concerns the setting up of Quality Circles in manufacturing and sales to develop solutions for these opportunities. Soon the Members see the need for setting up interdisciplinary teams with representatives from finance and production control to help the sales and manufacturing people fully resolve the conflict.

EVERYBODY WINS

Properly managed conflict will:

- Stimulate the creativity of the Circle Members - they develop new approaches

- Increase Circle productivity - with more ideas

- Improve Member effectiveness - with better ideas

- Improve communication - within the Circle, between Circles and throughout the organization

- Increase empathy - Circle Members are encouraged to see each other's point of view

- Improved understanding of Circle goals - and the tie-in to organization goals

- Increased commitment to Circle goals - and the organization goals

Directed Quality Circles: A Mainland China Approach

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In 1980, mainland China regulated that industries must install quality circles as a means of gaining mass participation in a total quality control program. While observing, teaching and interacting with circle trainers, leaders, and members in various Chinese industrial plants, it was apparent that China has created a directed form of employee participation.

INTRODUCTION

The Peoples Republic of China's State Economic Commission established its regulations for Total Quality Control (TQC) in Chinese industrial enterprises in 1980. This regulation for "putting quality in first place"(1) was implemented to meet the requirements of China's "Four Modernization Program". This planned economic program was designed to elevate China to the status of a front ranking world economic power by the year 2000. It was and is aimed at achieving an ambitious improvement in China's agricultural, industry, science and technology, and defense.

TQC in China involves the control of the quality of the products and services throughout the entire process from design through manufacturing to post-sales service and customer evaluation. Quality Circles methodology is used to provide worker involvement and participation in the TQC process. As a member of a quality specialists group that toured China during 1985 under the joint sponsorship of the People-To-People Ambassador Program, The American Society For Quality Control and the China Association for Science and Technology (CAST), I was able to study and observe quality circle training and quality circle operation in industrial plants such as The Beijing Peoples Machinery Plant, The Tianjin Carpet Factory, The Dalian Ship Yards, and other industrial operations in five mainland China industrial cities.

To understand China is to understand change. Alvin Toffler in his book Future Shock defines changes as, "The process by which the future invades our lives."(2) China, whose history dates back some 3,500 years has undergone many changes in its environment, government and lifestyle and today those changes are accelerating as mainland China struggles to become a world power. To understand China's approach to quality and quality circles we must take a look at some of those events in its history that established its present value system.

During October of 1949, the Communist forces led by Mao Tse-tung forced the Chiang Kai-shek government to retreat to Taiwan and a Communistic (or as they refer to it, a socialistic) government was established to govern China.

In 1958, Beijing government broke with the Soviet model and announced the economic program called, "The Great Leap Forward". Cooperatives were formed and people were pressed into these communes. The results were disastrous with normal market mechanisms being disrupted and people being exhausted as tools of this society. The products produced under this system were shoddy, of poor quality and, in many cases, were not fit to be sold.

In 1960, the so-called "Cultural Revolution" was initiated. Universities were closed, old cultural ideas were destroyed, and people were uprooted to help work how and wherever the government directed. In talking with an interpreter in a large machine factory in Tianjin, he said that he was about to enter his first year of college when the cultural revolution occurred. He was forced to leave the city of his birth to work planting and hoeing on a large communal farm for about five years. When he was finally allowed to return to his home city, he was unable to continue his educational dreams. He had gained his knowledge of English and other subjects by studying at night utilizing limited resources.

Today China is again undergoing a massive change. They have taken large strides in providing the basic necessities such as food, employment, housing and security for their people, but still have not met their planned goals. They are using a controlled limited free enterprise system to achieve some self-activation in the workplace. Their goal is to produce material and services that equals or surpasses world quality levels. To achieve this goal, China has dedicated itself to improving the quality of its entire industrial organization.

By establishing the necessary regulations, China is directing their people and their industries to establish total quality control in every shop, plant, or large industrial complex. Quality therefore becomes the key to improving the industrial setting and the performance of the Chinese industrial system. The approach to Total Quality Control and quality circles in China has as its basis many of the teaching and techniques as established by Japan and The United States. However, in order to work in the socialistic setting of China, many of the techniques of Total Quality Control and quality circles had to be revised or adapted. This paper will cover two sides of the quality circle picture in China today. First, it will cover the official or factual outlook as presented by the Chinese government and the Chinese industrial sector. Secondly, it will present the author's perception of how China is actually dealing with and utilizing the quality circle procedures and methodology.

THE FACTUAL SIDE OF CHINESE QUALITY CONTROL SYSTEM

When the State Economic Commission accepted the provisional regulation for Total Quality Control in industrial enterprises on March 18, 1980, Total Quality Control and quality circles became a law for industrial plants of all sizes in China. If you visit a Chinese plant large or small and ask the question, "Do you have quality circles?" the answer will always be, "Yes, we do". Because it is the law. Because it is a requirement.

Per government regulations, Total Quality Control is now a central link in the Chinese enterprise management system. It is also a scientific method for them to provide quality control in their emerging industry.

This doctrine requires that all the workers and the staff of the various enterprises be trained and informed about what quality control can do to help promote the Chinese industry. In China, all quality circles are under the control and auspices of the quality control department. The quality control department, reporting to a high level of management, has the task of planning for product quality along with making sure that quality is maintained during the entire course of production. Their task does not end when the product is produced. They must audit, evaluate and assure that the quality is acceptable for the end user. Quality control in the course of use is an extension of the work of the quality control department in Chinese industry which means they must take active steps to ensure that:

1. Compiled manuals explaining the use of their products are in the hands of the user.
2. Impart techniques about the installation, use, and maintenance of the product and help train technicians in ways to solve technical problems in the use of the product.
3. Provide blueprints for the manufacturer of the parts and assure that spare parts and accessories are available.
4. They must set up a network of repair shops or retails shops, and in certain cases, must take service directly to the user's doorstep.
5. Manufacturers must help users with the installation and trial runs of certain complex products and also provide technical guidance.

All Chinese industries must have a system of quality control. It must be a comprehensive system that covers all of the standard practices as established in the United States and Japan. All industries also, in light of the regulation for quality control, must mobilize their people extensively to carry out various forms of activities in the quality control domain. Quality control groups or circles, in some form or other, are set up with reference to the actual manufacturing conditions. They are given the task of constantly carrying out and being concerned about the quality control and the major problems in their area necessary to maintain and improve quality. The workers must maintain records and be sure that those records provide for and establish a good quality control system. They are also enjoined to organize themselves to take an active part in the "Quality Month" drive. This endeavor provides a forum for exchange of experiences and to promote the steady improvement of products. It is also a forum for recommending advancement for workers who have shown extraordinary progress and as a way for the state to present the various awards and banners to those who have made positive achievements.

Education in quality circles has been carried out by a concerted effort between the Chinese academic society, The Chinese Quality Control Society, and the various plants' management. Many academic professors were invited to Beijing to create and revise a curriculum for teaching Total Quality Control and quality circles to the various levels of workers and managers in the plant. Because of the vast number of potential workers, China has been able to train a percentage of people who are not actively involved in the work force. Their official program is to have all workers constantly and repeatedly educated in the various problem solving and discovery tools of quality circles. The content and time of study is stipulated according to the worker's trade and their needs. Education takes place both inside and outside of the factory and is integrated so that all concerned are able to acquire the basic knowledge and methods of quality circles and total quality control. They are also actively encouraged to apply them in a flexible way to their own jobs.

Effective steps are also taken to provide training in technical schools and various other technical training courses. A variety of methods such as on-site training, technical demonstrations, competitions of skills, and selection of skilled people in conjunction with everyday production activities is encouraged so that workers can study and raise their technical standards. New workers are given basic technical training and education in quality circles following their recruitment. Before a worker is assigned to the workplace, he must pass an examination and acquire a certificate of qualification for operation. This is all before they take over their work station and operate it. All workers are subjected to technical and professional examinations on how to improve the product quality according to the TQC provision. The results are entered in a record and the worker's promotion or upgrading depends on this factor.

Professor Woo of The Jinan University, Guangshou, gave the following outline of the course offered by that institute in support of the Chinese TQC program:

1. The importance of quality control, especially for international competition.
2. How to manage quality in a factory
3. Methods of quality control
4. Quality inspection with minimal inspection time
5. Quality circle instruction
6. Statistical quality control

In working directly with Chinese quality circles, it was ascertained that they were not only using the normal seven tools utilized by most U.S. circles, but were also using some different innovative procedures involving nonverbal interaction.

The workers' rewards and punishments are based on their activity in the total quality and quality circle activities. The Chinese principle is that of, "High prices for high quality, low prices for low quality" and the priority is placed on the number of units of acceptable product produced by the worker.

Outstanding groups and individuals who have shown that they have made significant contributions to quality control and improvement of product quality are recognized and given annual material rewards. Those enterprises whose products are of inferior quality, and stay that way for long periods of time, due to chaotic business management and worker inefficiencies, are ordered to make improvements within a set time. If these changes are not made, they are ordered to stop production and take the necessary corrective action. If this step is utilized, the wages of the leading cadre are reduced and the bonuses for the workers are suspended until the quality is brought up to acceptable standards. It is thus apparent that the "stick and carrot" philosophy is not only evident, but readily and effectively, employed in the modern Chinese industrial approach to quality.

EXAMPLES OF QUALITY CIRCLES IN CHINESE INDUSTRIAL PLANTS

To indicate the scope of Q.C. circles in China, the following examples are presented:

The Beijing Peoples Machinery Plant
This plant manufactured offset printing machines of one, two and three color types. In 1984 they won one gold and two first place metals for quality.

The plant cannot meet the market demand for their products and thus are working in a seller's market. The plant manager, Mr. Jia, outlined the company's quality control program. Their approach was in a three part system. From 1979-1980 the company trained their employees in the total quality control program. The employees were required to participate in this program. In the second step from 1980-1983, they incorporated the Q.C. program into their manufacturing process. From 1983 - present comprises the third step which deals with the implementing of the total quality assurance system, a major portion of which is their quality circle program. The quality circles in this plant make management presentations twice a year. Seventy percent of the workers participate in the quality circle program. Their efforts in the quality area have raised the product acceptance levels from 70% to 95% which has resulted in a lower product cost.

Beijing Battery Factory - This facility manufacturers zinc carbon batteries. Over one hundred million per year of approximately forty different types were manufactured. They employed 1,200 people in five shops. They started formal quality training in 1977 after receiving help from Japan and The United States. The plant had twenty quality circles active and operating and many of the circles were starting to use Statistical Process Control to aid in solving the problems of the plant.

The Tianjin Radio Factory - This factory employs 5,000 workers: 300 of whom are engineers. They manufacture primarily television receivers and other electrical devices. The plant management has emphasized quality as the production rate has increased. The factory's policy is to be first class in technology, management, product and service. There were 222 quality circles in operation with a total membership of 2,042. Of the employees, 98.9% had received quality circle training.

After touring the facility, we assembled in a conference room for a presentation by one of the factory's quality circles. This circle discussed their work with a high defective rate in the UHF tuners by using the classical Quality Circle's approach to problem solving. They reported that this particular activity had realized a savings of 42,702 yuan (about $15,000 U.S.). During a question and answer session with plant managers and line workers, it was ascertained that, while much of the training and education is done during the work period, some of the training and circle work is performed on the employee's time.

MY PERCEPTIONS OF THE CHINESE QUALITY CIRCLE SYSTEM

It was apparent that the extensive contact with Japanese and American quality control experts had formed the basis of the

Chinese program. However, while they were stating the same principles and mouthing the same words, it was particularly discernible that the Chinese approach to Total Quality Control and quality circles was vastly different in a cultural and economic way to that as practiced in the United States and in Japan. As an example, one of the main elements of the Japanese and American versions of quality circles is that participation must be voluntary. While the Chinese system states that those who participate are to volunteer, it is hard to define volunteerism in the Chinese system. In direct contact with Chinese circles at the worker level, it became apparent that, while they may have volunteered, they volunteered because they believed that this was their "duty" as part of the desires and working life of every socialistic worker. While it may be desirable and/or essential for participation to be voluntary in a free enterprise system, it is questionable whether in the socialized system such as mainland China with its constant control and direction, that the norm for quality circle participation would be directed as adapted to the cultural and environmental background of the Chinese people.

The perception is that while China has all the practical knowledge and techniques of quality circles at this point, they have not captured the true essence of the program. There are still some advantages and disadvantages to be looked at as the Chinese approach the quality circle/total quality control concept.

ADVANTAGES:

One advantage of the Chinese approach is that by making the practice of quality circles mandatory, or practically so, it has made it a dynamic and viable part of the system. In the five industrial cities that I visited, every plant was eager to relate how it was complying with the law requiring quality circles. The government's influence certainly has created a wide spread development and, at least, partial acceptance of quality circles and TQC.

Another advantage in the socialized system is that it allows for the direct integration of academic theory and academic personnel into the industrial domain. Many of the university professors are required to teach, consult and be actively involved in the industrial sector. On-site training is performed by university personnel for workers as needed and they, in turn, gain "hands-on" industrial experience.

This commitment to training is another advantage to the Chinese approach. Many Chinese workers undergo from three months to three years of "unproductive" training prior to taking up their work post. Training in quality control techniques is an obligation and a must requirement for most workers.

Many of the ideas which serve as the basis for TQC/quality circle methodology blends nicely with the cultural environment of China. Their system is based on sharing and improving the basic quality of life for everyone. In principle, therefore, every worker is an owner and thus should have all the obligations and advantages that go with ownership.

DISADVANTAGES:

One of the disadvantages that was perceived is that, while technically everyone under the Chinese system is equal, there is an invisible, but strong "cast system" that permeates every aspect of the Chinese life and work style.

As an example, in the city of Shenyang, the author met with a quality circle from the Shenyang Heavy Machinery plant. This plant produced containers for LP Gas. Meeting with this quality circle in the morning, we had a very open interesting discussion about their problems and their successes and failures in trying to solve problems. During the same day, I visited the plant and met with the plant management accompanied by one or two of the circle members and their leader. During the entire session, none of the circle individuals offered one word. They always deferred to the advise and wishes of the higher management personnel.

I perceived a silent, but strong influence of the Communist Party in every planned meeting. The perception that a visible, or invisible, party member was always present and I cannot believe that this dual involvement was not also happening in and to every quality circle as it tried to operate in the Chinese industry.

The Japanese and American systems of quality circles have always proclaimed that circle involvement must be voluntary. And while the Chinese theory also echoes this, in talking with various Chinese circles, I perceived that to be involved in a circle when asked was so ingrained in the system, it was hardly voluntary as we would perceive it.

China's problems of how to provide gainful employment for its huge population is another disadvantage to the quality circle program. Many jobs in the Chinese industrial setting are extremely "manpower extensive". It is my belief that this is by design as well as by practice. It seems that, in order to provide jobs for as many individuals as possible, many suggested improvements or corrections would not be justified or popular.

I believe that while quality circles has been adopted by China from the Japanese and American experience, they have, at this point, not made the necessary adjustments to truly make it a Chinese experience.

A disadvantage shared in common with many American circles is that there seems to be a need for more involvement, cooperation and commitment by top management. While most plant personnel were open and candid, seldom were the very top plant executives available during our discussions and tours.

CONCLUSION

What does the Chinese approach to TQC/circles mean to us? Let me conclude with what I believe the involvement in quality circles in China is going to mean First, I believe, if China in their autocratic socialistic government situation, can make circles work, then it can possibly provide us with a pattern for making circles compatible and acceptable to many American autocratic companies that have rejected or, at least, not embraced this movement because it did not blend with their style or culture. For many companies, the directed quality circle concept and its approach as practiced by the Chinese, may be a way of getting worker participation into an area which, at this point, has been rejected.

I also believe that by the turn of the century the Chinese are going to improve the quality of their products to a level that they are going to gain a share of the world market. We, in America, are presently being challenged by the eroding of our internal and external market share by the Japanese and other Asian countries. I fervently believe that the threat and the challenge from the Chinese will make the Japanese economic invasion seem like a small skirmish in what will be the next economic world war: the fight for economic survival.

We who believe in the American process, the American products, and the American way of life must develop our own American form of quality circles. We must accept all the knowledge we can from not only the Japanese, but the Chinese and anyone else. One of the things we must develop, implement and establish is a true American process for participation. A process that not only employs all the techniques currently provided by the quality circle system, but also allows the worker to be involved in quality circles in an emotional as well as logical fashion. This is the challenge that faces us and a challenge that must be met by all members of the International Society of Quality Circles.

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BIOGRAPHICAL INFORMATION

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Creativity: Awaken The Sleeping Giant And Let Him Out To Play!

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Creativity and open-mindedness are essential tools to a Quality Circle as employees leave their work areas for their meetings. Getting people to think creatively several hours into a normal workday however, can be a real chore! The first five to ten minutes of a meeting would be well spent in a "creativity warm-up" for opening the minds of the group members and getting them to do some free-wheeling. Who knows? The most absurd idea could be turned around by someone else and be the perfect solution to a long-standing problem. This session will have many examples of "creativity warm-ups" for use by any group, and will include transparency masters. Audience, group and individual participation will be encouraged to demonstrate many of these warm-ups.

Why use a creativity warm-up? Isn't it a waste of time?

When people meet for only one hour per week, it's difficult for them to arrive for the meeting already focused. Some might be thinking about a big project that they were right in the middle of, some might be mentally planning their grocery shopping lists, and others might be off on another planet just grateful for the chance to sit down, relax and get away from their work areas. It's very important that we get all these people thinking along the same lines and focus their energy in the same direction. A warm-up will accomplish this in the least amount of time with a minimum of effort, and it will be fun in the process!

What exactly IS a "creativity warm-up"?

A creativity warm-up can be almost anything. It is simply a vehicle for giving group members an opportunity to actively participate in some activity by either performing a task, solving a problem, answering a question, or discussing an issue.

Who should use creativity warm-ups?

ALL meeting leaders who hold meetings that last for one hour or more. Any kind of meeting would benefit from a warm-up, whether it's a Quality Circle meeting, a fundraiser or a PTA meeting.

WHEN should I use a creativity warm-up?

At the very beginning of the meeting. Your intent is to take your group members' minds off of their jobs and to start them thinking creatively. (To awaken that sleeping giant!) You will want to do this as soon into the meeting as possible. (It might even serve as initiative to get to the meetings on time: make it a practice to begin the warm-ups at the exact time the meetings should start. Those who are late will miss out on the fun!)

The length of the warm-up should depend on the length of the meeting. If you are only going to be meeting for one hour, you probably would not want to spend more than 5 to 10 minutes on a warm-up. If the meeting will last more than one hour, it's perfectly acceptable to do one warm-up at the beginning (such as a get-acquainted warm-up), and then another in an hour or two after they are starting to burn out.

Creativity warm-ups should be used with brand new groups as well as with established groups that have been meeting on a weekly basis for long periods of time. Remember that the intent of the warm-up is to get people thinking creatively, not just to get acquainted with one another.

Where do I get these creativity warm-ups from?

There are a number of sources. The IAQC carries three books that we have found to be particularly good. They are, "Warm Ups For Meeting Leaders", by Sue Bianchi & Jan Butler, "Games Trainers Play" and "More Games Trainers Play" by John Newstrom & Edward Scannell. All are excellent sources for warm-ups. The library has a multitude of books on training, party games, and joke & puzzle books, as do bookstores, and both can order those books that are not in stock. Many adult games (such as Trivial Pursuit) can be adapted in some way to fit the criteria necessary for a successful warm-up, as can puzzles and children's games.

How do I get started?

The book, "Warm Ups For Meeting Leaders" does an excellent job of listing the steps which will lead to the right warm-up for the right group. Authors Bianchi & Butler recommend:

Step One: Complete a Preassessment Questionnaire such as the following.

PREASSESSMENT QUESTIONNAIRE

1. What is my group's current knowledge about the subject?

____
____

2. What are the current skills of my group?

____
____

3. What is the current level of performance of my group?

____
____

4. What are the group's strongest points (good rapport, group knows each other well, etc.)?

____
____

5. What are the group's weakest points (hostility among members of the group, group is unfamiliar with the subject, etc.)?

____
____

After completing this questionnaire, you can assess where your group is now, and where you want them to be at the end of the warm-up.

Step Two: An Attitude Assessment Survey should be filled out to build on the information gathered in the Preassessment Questionnaire.

ATTITUDE ASSESSMENT SURVEY

Check all statements that apply

Unfamiliar with today's subject, but willing to learn and/or participate.	______
Unfamiliar with today's subject and resist learning and/or participating.	______
Suspicious of the group leader's motives.	______
Open to the idea of working together.	______
Closed to the idea of working together.	______
Would like to be doing something else other than meeting with the group.	______
Some members feel overworked, rushed or busy.	______
The members of the group are suffering from "burnout."	______
Everyone is committed to the group process.	______
Some (all) of the members are coming to the meeting because they are required to do so.	______
Other pertinent attitudes:	______

____

____

Based on the above information, write a statement about the atmosphere and attitudes that the warm-up should create. Include any problems that should be addressed by the warm-up.

Attitudinal Goal Statement

____

____

____

Step Three: Complete the form for Social or Topical Warm-Up.

There are two basic types of warm-ups: social and topical. A social warm-up serves as an "icebreaker", allowing people to get to know one another better, or to develop an atmosphere of teamwork, while a topical warm-up specifically introduces a new subject or issue.

CHOOSING A SOCIAL OR TOPICAL WARM-UP

Time Factor

The amount of time I want to allot for the warm-up:

5 minutes	____
10 minutes	____
15 minutes	____
20 minutes	____
specify length	____

Social/Topical Warm-Up

	Social	Topical
My warm-up is going to serve as an "icebreaker" and help the group get to know one another better.	______	
My warm-up is going to serve as a vehicle to help the members of the group become socially acclimated.	______	
My warm-up is going to help rejuvenate the group.	______	
My warm-up is going to introduce a new subject.		______
My warm-up is going to help the group to think about the subject of the meeting.		______
My warm-up is going to ease the group into connecting what they already know about the subject with new information being presented.		______

* * * *

The warm-up that will best fit my needs is: (Check one)

________ A Social Warm-Up

________ A Topical Warm-Up

Step Four: Complete the Developing Warm-Up Goals Worksheet.

The information obtained in the first three steps is now used to write the goals for the warm-up. Action verbs are crucial when writing goals. In this way, the outcome is measurable. For example, if a goal was written stating: "the group members will feel better about themselves", it would be hard to measure "feeling better." Here is a way to state the same goal in measurable terms: "the group members will be able to recite three positive statements about themselves."

DEVELOPING WARM-UP GOALS

The following are some examples of "measurable" actions to use in writing goals:

sort
name
order
chart
write
solve
match
choose
define
recite
compare
isolate
diagram
explain
clarify
identify
demonstrate
construct
distinguish

The following are some examples of actions that are too hard to measure:

understand
be familiar with
grasp meaning of
become aware of
believe
handle
learn
love
internalize
appreciate
master
enjoy

Goals for the warm-up activity:

At the end of _____ minutes, each member will be able to:

(1) ____
(2) ____
(3) ____
(4) ____

Step Five: Read through the Selecting The Warm-Up Category, and then select one of them.

SELECTING THE WARM-UP CATEGORY

Once measurable goals for the warm-up have been identified, the next step is to look at the options for the CATEGORY which will help meet those goals.

Almost any CATEGORY will work for any type of warm-up situation. The choice of category is a matter of personal preference and the information avaliable about the group. There is no magic formula for selecting the right category.

Some Warm-Up Categories are:

* Games
* Problems & Tasks
* Questions & Issues
* Dramatic Events
* Crafts
* Others (create your own)

Not all of the warm-ups you choose are going to work successfully. Some of them will be dynamite, some of them will have only moderate success, and a few of them will bomb. But that's OK. Go into each warm-up prepared and with enthusiasm, and whether you get the desired results or not, both you and your group should have had fun, AND taken your minds off of your jobs. The wheels of creativity should have been set in motion. Then you can begin your meeting on a positive note.

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BIOGRAPHY

Cynthia Lemm has been an Assistant Problem Solving Group Facilitator for the Cornelius Company for four years. She is an IAQC member, and is currently completing her B.A. Degree in Business Administration.

Intuition: A Critical Tool

Leta Letize
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If you are afraid to trust your intuition and rely only on facts and logic, you are missing out on a most important personal and business tool. The best managers, facilitators, leaders, and members of teams rely upon a mix of seasoned intuition and disciplined analysis. This presentation will explore the nature and uses of intuition. It will take a look at the situations in which you can use your intuition in working with a group and learn to trust these insights as a basis for intervention.

> *The circle meeting was coming to a close. The group was zeroing in on a decision. Suddenly, Larry, the circle's facilitator, addressed a quiet member: "John, you seem troubled. Perhaps you don't approve of the solution the team has agreed on." After some further prodding, John acknowledged that he didn't agree and shared his reasons. John's views altered the group's decision and saved it from an embarassing mistake. After the meeting, Sharon, the team's leader, asked Larry how he knew that John disagreed with the decision. He replied: "I don't know how; I just knew."*

In this case, the facilitator used his intuition as the basis for an important intervention. Virtually everyone experiences intuitive flashes like this, yet psychologists and behavioral scientists have only recently begun to analyze what they mean and to develop ways to help people use them to improve their decision making.

An Important Personal and Business Tool

In the past ten years there has been a dramatic increase in the interest paid to intuition as a critical business tool. Managers are far more willing today to admit that they have always used "gut feelings," "hunches," or "intuition" to help make their most important decisions. Not only is there ample evidence that intuition exists, but it may be the deciding factor which separates the successful manager or organization from the average.

In their bestselling book, *In Search of Excellence*, Peters and Waterman report that the ten best run companies in America nurture the use and development of intuitive skills in their management cultures. Likewise, Naisbitt, author of *Megatrends* and *Reinventing the Corporation* points out that organizations are granting a new respectability to the use of intuition in decision making. This subject is being addressed in business, scientific, and popular journals across the country. Intuition is finally gaining acceptance as a powerful brain skill for guiding problem solving and decision making.

What is Intuition?

Defining intuition may be harder than implementing it. Definitions of intuition include: "the immediate knowing of something without the conscious use of reasoning," "a way of knowing .... recognizing the possibilities in any situation," "guick perception without conscious knowledge or feeling." Some of these definitions may give a clue as to why intuition has been mistrusted. From early grade school to graduate school we were taught to rely on logical, rational analysis and facts. Now we're being encouraged to "trust our intuition." This is partly because the traditional view of intuition is changing. Some say intuition has a factual base and is based on past experiences and knowledge that we cannot immediately recall. The unconscious mind assimilates information at a rate we are not consciously aware of. Therefore we find ourselves in situations, knowing what to do, but not consciously aware of how we know. So perhaps we can say that intuition is a way of knowing without awareness of the factual basis for the knowledge. It is the ability to sense your environment and be able to act based on your hunches and feelings. It comes from the capacity to integrate information coming from both the left (analytical, logical) and the right (holistic and relational) sides of the brain.

We all have intuition and utilize it frequently although we may not be aware of it. In driving, for example, we rarely think about the complex series of actions we take to move through a busy intersection. It becomes second nature. We enter a "flow state," much the same as a karate champion, where our actions simply flow from the situation.

Intuitive cues come to us on several different levels: physical, emotional, mental, and spiritual. At the physical level, we may have a strong body response (chemistry) to a person or situation without any apparent reason. Our body intuitively is telling us something. At the emotional level, our intuition comes to us through our feelings. We may instantly like or dislike someone for no obvious reason. On the mental level, we know what's going to happen or we know a direction to take without conscious analysis of the situation. Another level that intuition can function is at the spiritual level where we sense that our acts are linked with the well-being of humanity.

Practical Use of Intuition

In problem solving and decision making, intuition is a critical tool. It provides a competitive edge over critical analysis alone. While logic is a crucial tool of analysis, logic has its limitations. The successful manager, facilitator, team leader, or member will rely on both logic and intuition when working through the problem solving process. Facilitators are often involved in the flow or process of the circles they assist. They need to be sensitive to and react to the quick-paced complexities of the group dynamics on a team. They need to learn to trust their intuition as a basis for intervention and problem solving. A team leader needs to blend the unconscious skill of intuition with the cognitive skills of analysis when leading a team through the process of problem solving.

Intuition, fully developed, is a fast and accurate process. The answer comes even if we do not understand the steps. The more open we are to these feelings, the more secure we become through practice in our ability to make correct assessments.

While foreign to many, the use of intuition is common in the daily routines of other cultures. A good example of this is found in Japan where a group of professionals use their intuition daily as part of their job description in a hatchery. It is their job to determine the gender of baby chicks, even though the chicks' sexes are indistinguishable shortly after birth. These employees use their intuition to decide which is a rooster or hen with 99 percent accuracy. The process they use to separate chicks is not a conscious effort. When asked they say they just "know."

Intuition is a powerful tool that has many uses:

- prevention - an intuitive sense that a problem exists may lead you to investigate an isolated fact or event that doesn't seem just right and you may uncover problems long before they come to the surface.
- insight - isolated bits of information and seemingly unrelated experiences are suddenly synthesized into an integrated picture or a clarifying idea which suddenly unifies information, taking one beyond the sum of the parts.
- new possibilities - generating new ideas and possibilities in a situation and providing new and ingenious solutions to old problems.
- vision - having a sense of what is coming in the future and how to respond to that.
- change - dealing effectively with rapid change and crisis.
- check and balance - on the results of more rational analysis.
- problem identification and diagnostic analysis - augmenting force field diagnosis by bringing into the field important subliminal feelings and perceptions; fostering alternative ways to view the problem.

These practical uses of intuition tie in dramatically to the "megatrend" environment organizations are entering. Companies will need to "dream up" new products and services for the future because many that will be needed don't exist today. Organizations will need employees who can make sense out of the myriad facts and pick out emerging trends. Organizations need employees who can find creative solutions to the complex problems of productivity and quality.

Learning to Use Your Intuition

Like many other human skills, the more comfortable one becomes with intuition, the more it becomes a part of one's total functioning as a human being.

Intuitive energies can be released. Intent is the first step. Value your intuition and make the decision to develop this ability. You will need to devote some time to developing it, including time to relax and release physical and emotional tension. Silent time alone can be helpful.

You must learn to be receptive and open to the internal cues you receive, being careful not to judge every thought and perception, but letting them freely enter your conscious mind. Trust yourself and your internal cues. Be aware of your own self deception practices. Accept things as they truly are, not as you wish them to be. Have courage and be willing to accept the unknown.

There are several techniques for facilitating the use of intuition. Relaxation techniques are important and may include meditation, exercise, listening to music, or simply "sleeping on the problem." Also helpful are mental exercises, such as: practiced guided imagery; brainstorming unique solutions with no factual justification, or playing freely with ideas without a specific goal in mind. Analytical exercises can unleash intuitive insights. Discuss the problem with many people who have different perspectives. Concentrate on listening to not only what but how people express themselves. Tune in to internal reactions to outside stimuli. You may want to analyze your dreams for insights they may give you.

As the mystery and magic of how intuition works becomes better understood, organizations will be more likely to accept and support this skill that we all possess to some degree.

In Summary

Those of us who are involved in the employee involvement movement are continually heartened by the creative contribution that employees are making to organizational improvement. This effort increasingly requires interdisciplinary expertise and a capacity to choose and recombine information imaginatively. The intuitive path to knowledge enhances creativity. No one is advocating that intuition be relied upon exclusively or that more traditional problem solving methods be abandoned. On the other hand, the time has come to recognize that intuition is itself a key human resource that should not be ignored or abandoned So don't throw out your fish-bone diagram and your pareto analysis, just augment your tried and true methods with a not-so-new, but perhaps under-utilized, problem solving tool. Learn to use and trust your intuition.

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BIOGRAPHY

Leta Letize, Vice President of Productivity Development Systems, Inc., is nationally known as an author, speaker, and consultant to organizations that are making employee involvement an integral part of their strategy to improve productivity and the quality of worklife.

Ms. Letize holds an undergraduate degree in Management and Marketing from the University of South Florida and is currently a candidate for a Masters Degree in Organization Development from Pepperdine University.

Work Analysis Approach to Problem Identification

Robert A. LoBue
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A common concern of managers and facilitators is that Quality Circles do not identify and select meaningful projects within their control to solve and implement. The Work Analysis Approach is a structured technique that can assist Quality Circles in identifying problems over which they have at least partial responsibility and control.

This presentation will describe and illustrate the Work Analysis Approach to Problem Identification, which focuses on: 1) identifying the basic function/objectives of your work group; 2) describing the process you go through to do your work; and 3) identifying inefficiencies in your work process.

Participants will learn how, when and why they should consider using this approach.

INTRODUCTION

The Westinghouse Marine Division Quality Circle Program has been in existence over seven years, and is staffed with three full-time facilitators whose primary function is to administer and coordinate the program. A common concern of the management and the facilitation staff at the Marine Division has been that Quality Circles were not identifying and selecting projects within their control to solve and implement. One of the main reasons circles identified projects out of their control was primarily due to focusing on problems they were having with other departments. Typically, they would begin brainstorming for problems and start "pointing the finger" at other departments with which they were having problems. When circles selected projects that were outside their control, they often encountered difficulty trying to implement their recommendations and became very frustrated.

For the past four years at the Marine Division the Quality Circle staff has stressed the importance of identifying and selecting problems that were within the control of the Quality Circle to solve and implement. The WORK ANALYSIS APPROACH TO PROBLEM IDENTIFICATION, which we have been using since Septemoer, 1985, is a structured technique that has enabled Quality Circles to focus on their department and the key elements of their work. This process assisted them in identifying problems within their control.

WHAT IS THE WORK ANALYSIS APPROACH?

The Work Analysis Approach is a method by which a Quality Circle:

1. Defines the basic function/objectives of their work group.
2. Describes the process they go through to do their work.
3. Identifies inefficiencies in their work process.

WHY SHOULD YOU USE THE WORK ANALYSIS APPROACH?

Quality Circles at the Marine Division have been using this approach for a year and a half and have experienced the following benefits:

1. This technique assists Quality Circles in identifying the key elements of their work.
2. The method helps circles to analyze their work process and determine how they can make their process run more efficiently, which in turn helps to improve performance.
3. The Work Analysis Approach enables groups to focus on problems in their department that are within their control to solve and implement.
4. This process aids new employees in better understanding goals, objectives, and work flow of their department.

HOW DO YOU USE THE WORK ANALYSIS APPROACH?

The first step is to have the Quality Circle answer the following four questions on a flip chart:

1. What is the basic function/objectives of our work group?
2. What are the specific inputs we receive to do our job and where do they come from?
3. What is our output/end result and where does it go?
4. Describe the process, in specific actions, that we go through to do our work.

The second step is to have the circle identify inefficiencies in their work process. They should refer to their answers to questionn 4, regarding their work process, and answer the following questions on a flip chart:

4a. Where are the bottlenecks?

4b. How do we lose time?

4c. Where in the process is there duplicate effort?

4d. Which segments of the process consume the most time?

4e. Where does information get lost?

4f. Are there projects of great importance that barely make or miss the deadlines?

The third step is to analyze your responses to the six preceding questions and record on a flip chart the following:

1. List of common problems and/or issues.
2. Make sure each problem is clearly stated.
3. Only consider selecting projects that are within your control to solve and implement.

If the circle feels their list of problems is not sufficient, they can brainstorm for additional problems.

WHEN SHOULD YOU USE THE WORK ANALYSIS APPROACH?

Quality Circles should be given the option on whether they wish to use the Work Analysis Approach. We have found the approach works best with groups that have similar positions or do similar work. It is easier for them to identify common problems or issues that are within their control to resolve.

The Work Analysis Approach initially takes longer than the traditional method of brainstorming for work-related problems. However, a distinct advantage of this approach is that most groups have to only invest in this process one time. Our experience has shown that this initial upfront time investment results in decreasing the overall time necessary to complete specified projects.

Most of the circles that have chosen to use this technique have found it to be a practical alternative to existing problem solving practices.

CONCLUSION

One of the keys to effective problem-solving is the identification of meaningful projects that are within the control of the Quality Circle to solve and implement. As facilitators and leaders, one of our major responsibilities is to assist Quality Circles in identifying and selecting projects that are within their control to resolve. The Work Analysis Approach has proven to be a valuable tool in meeting that responsibility.

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Bob LoBue is a Senior Quality Circle Facilitator at the Westinghouse Marine Division, Sunnyvale, California. He has five years experience facilitating Quality Circles. In addition to facilitating circles, he works with task teams and conducts training in Communication, Team Building, and Problem Solving. He served on the Board of Directors of the San Francisco Bay Area Chapter of Quality Circles.

Title: The Team Responsibility Window: Helping Circles Decide Which Problem is Theirs

Linda M. Miller
Boeing Computer Services Company

David L. Nelson
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The Team Responsibility Window: Helping Circles Decide Which Problem is Theirs; Linda Miller and David Nelson, Boeing Computer Services; Quality circles embarked on the problem definition phase of their efforts are often faced with a hierarchy of problems they could conceivably work on -- every problem both causes and is caused by other problems. The circle needs to be able to sort through this lengthy hierarchy and find the problem statement that falls within their own responsibility to help solve.

This paper introduces a concept that helps the group determine the problem level within a hierarchy that they need to concentrate on. The Team Responsibility Window is the analog of a template that is used to match up the problem statement with the team's mission and objectives. We teach this concept in our own training courses, and it has been extremely helpful to our operating circles.

Quality circles embarked on the problem definition phase of their efforts are often faced with a hierarchy of problems they could conceivably attack -- every problem both causes and is caused by other problems. A circle needs to be able to sort through this lengthy hierarchy and find the one problem statement that falls within their own responsibility to help solve.

There has been a lot of emphasis in quality circles on the differences among causes, problems and symptoms. Without blurring the important distinctions among these concepts, we wish, for the purposes of discussion, to call everything a "problem." If you have a sore knee, that's a problem in itself, even if it's only a symptom of some other problem, because it hurts and keeps you from doing things you'd like to do. If you are an avid jogging enthusiast, like one of the co-authors (LM), then a sore knee is a real problem. It in turn causes the problem of keeping the person from jogging as much as he or she would like to, which in turn can cause the problem of a decline in physical fitness, which in turn can cause health and morale problems. (If you are not a jogging enthusiast, like the other co-author, DN, then you don't get sore knees in the first place.)

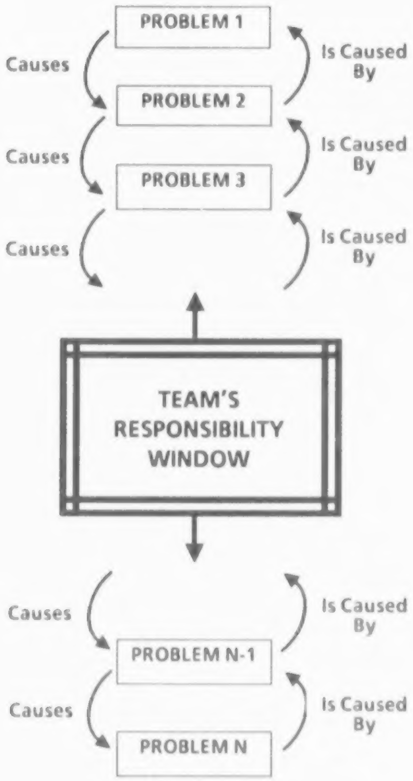
In the work environment, and certainly in quality circle problem solving efforts, hierarchies of problems abound. Imagine the string of related problems that a few years ago faced the designers of a popular American car whose gas tank would explode in fairly minor rear-end collisions. The problem of a poor engineering design or poor engineering specifications was a contributing cause of poor construction from a safety standpoint. But the engineering problem was in turn caused, at least in part, by a desire to produce a gas tank at least cost for a car that had to fit a particular overall cost target. The cost target was dictated by marketing, which had an eye on the corporate balance sheet given to them by the business managers, who in turn were trying to keep the stockholders happy.

The problems in the hierarchy we've just described aren't all that difficult to sort out. It isn't hard to tell which organization in the auto company is responsible for which problem. But how many times have we witnessed a problem solving team trying to solve one of the problems in a problem hierarchy that isn't theirs? An example in the case just cited would be the assembly team trying to change the cost budget for various components of the car. The cost budget is an important problem, but it isn't their problem to solve.

The chart on the following page is a pictorial representation of a tool we present in our quality circle training classes at Boeing Computer Services. It depicts a string of problems in an admittedly simplistic way, but it gets the point across. One kind of problem always causes another kind of problem. Every problem you face is caused by a problem farther up the hierarchy. If you're committed to do something about the string of problems at all, you're better off concentrating on the problem level that matches up with your own Team Responsibility Window. Once you've done that, it then makes perfect sense to look at both the causes and the effects of the problem that belongs to you to see what coordination has to take place in order to get the whole string of problems solved.

Here's how the Team Responsibility Window works: First, the group has to put together a hierarchy of briefly-stated problems that "encompass" the full problem area they are approaching. Next, the group sits back and defines its own respon-sibilities as they relate to this general problem area. The group's overall goals and objectives come into play here. The group then conceptually superimposes this responsibility definition on the problem hierarchy to focus on a particular level. Finally, the group refines the problem statement at that level and develops it into a clear definition of the problem they want to solve and are qualified to work on.

PROBLEM HIERARCHY



Some of the questions the team needs to be asking during this process are:

1) Is this our area of work responsibility?
2) Is this problem being worked by some other group or organization?
3) Is this an area in which the circle has the requisite knowledge, skill and experience, or could easily get it?
4) What is the comfort zone for the members regarding this problem area? Are we within our area of responsibility?

A final note: It could happen that a problem solving team is being adversely affected by a problem that is totally out of their responsibility area -- for example, the people on the team are engineers, and the system under which they bill their labor to different projects has some serious flaws. This engineering team may still have a great deal to contribute to the overall problem solving effort, by showing the impact on themselves and the projects they support of an unsatisfactory labor reporting system. In other words, these engineers can display the problem hierarchy as they see it, and prepare a presentation for the finance manager, so that his problem solving team can attack the problem at the appropriate level.

BIOGRAPHICAL INFORMATION

Linda M. Miller is currently employed by Boeing Computer Services as a Quality Circle Facilitator and training coordinator for circle activities. BCS is using a team teaching approach to Quality Circle leader training and Linda is responsible for coordinating the training sessions as well as the team of facilitators who teach the three day class. She currently facilitates 12 circles across several divisions in the company and provides member training for several divisions.

Since 1979 with BCS, Linda has been involved with Software Development Project Management and the technical area of computing workload evaluation.

Before joining Boeing, Linda taught middle and high school science and physical education. She earned her Bachelor of Science degree from Idaho State University and her Masters degree from Washington State University. She taught at Washington State University on a teaching assistantship while doing graduate work.

Linda has gained valuable experience in teaching communications skills, stress management and conflict management through community and church volunteer programs.

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Since joining The Boeing Company in 1969, Dr. Nelson has been engaged personally in research, consulting and computer program development in the areas of time series analysis, regression and probability distributions. He has been involved in the development of a computer package for spectral analysis of multi-channel random data, and has written and adapted many multipurpose programs for BCS's statistical program library. For several years, Dr. Nelson served as coordinator of statistical computer programs and packages on a variety of BCS computing systems. He remains active in statistical computing organizations, particularly in the area of statistical software evaluation.

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Survey-Feedback: A Tool and Process for Enhancing Employee Involvement

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Survey-Feedback is an organizational development tool which utilizes total employee involvement as an essential part of the process. Definitions, premises and process descriptions will be delineated as a foundation to the presentation of a case-study, discussion of outcomes, learnings and essential elements of success which pertain to many change efforts.

INTRODUCTION

This paper will present the survey-feedback process as one way to introduce or enhance employee involvement in an organization. It is a powerful tool and process for implementing change processes, but by no means a panacea or stand-alone intervention to improving the effectiveness of an organization or its subunits. This paper will delineate essential definitions, premises and process descriptions as a foundation to a case-study, discussion of outcomes, learnings and essential elements of success which pertain to many planned change efforts.

In that survey-feedback is a planned change process, it is considered an organization development (O.D.) intervention. Diagnosis and involvement are common elements of a Quality of Work Life (QWL) process. Survey-Feedback, QWL and O.D. are defined as follows:

Survey-Feedback - Through the use of an attitude survey which is administered, data is presented to those who took the survey from which they base their analysis, problem identification and problem-solving activities. The survey usually attempts to tap the dimensions of managerial and leadership practices, group functioning, reward systems, and people and technology congruence. Impediments to effective performance in other areas (safety, work environment, adequate tools and equipment, etc.) are also usually elicited. The data from the survey is synthesized and presented in a cascading, hierarchical fashion from the top of the organization - down. Upper management usually deals with overall system data and intact work groups work with their specific data - with their direct supervisor facilitating feedback/problem-solving meetings.

"Quality of Work Life (QWL) is a process for work organizations which enables its members at all levels to actively participate in shaping the organization's environment, methods and outcomes. This value based process is aimed toward meeting the twin goals of enhanced effectiveness of the organization and improved quality of work life for employees" (Skrovan, 1983).

Organization Development (O.D.) - Very simply, can be described as a "planned and systematic attempt to change patterns of organizational behavior" (Bennis, 1969 and Beckhard, 1969). The goals of O.D. are to help catalyze efforts towards creating a more effective organization and to guide the enhancement of the QWL which individuals within the organization experience. The main characteristics of O.D. are: the application of behavioral science knowledge in a collaborative and participative process with the guidance of an internal and/or external change agent(s); responding to some organizational problem or felt need; and the generation and use of valid data about organizational functioning.

Some of the main premises behind surveys (data collection) and feedback (employee involvement in analyzing and problem-solving areas needing improvement) are as follows:

1. Data Collection as an essential element of planned change:

Argyris (1970) has argued that the generation and use of data is the central, defining characteristic of O.D. The use of systematic data collection, analysis and feedback defines broadly the process, the "how" of a beginning O.D. effort, and an intervention tracking system. Nadler (1977) has proposed certain premises essentially adhered to in this effort. He states that data can be used as an organizational change tool; that data collection in and of itself is an intervention into organizational life; and, that if an organization is to change, it must obtain a valid image of itself in the present, develop a clear picture of its problems, and construct changes that will guide it towards improvement.

French and Bell (1973) describe O.D. consultation as a process which engages in "action research" as a core modis operandi. They define "action research" as:

> "The process of systematically collecting research data about an on-going system relative to some objective, goal or need of that system; feeding this data back into the system; taking actions by altering selected variables within the system, based both on data and on hypotheses; and evaluating the results of actions by collecting more data."

This process represents a collaboration between the consultant and the people of action. This link is a complementary venture of the social science professional and the management professional. The use of data for organizational change is thus a collaborative effort engaged in by those with specialized knowledge and those who use that data for specific purposes of problem identification, problem solution and future planning.

2. Organizations have the ability to change

A systems perspective views the organization as organic. Similar to living organisms, an organization uses feedback mechanisms to adjust, adapt to and correct a direction. The description of an organization being like an information-processing, goal-directed living organism is more than an analogy. It is the individual and collective effort of people which defines an organization. Organizations use information (data) to detect and correct problems. This is consistent with and derives from Wiener's cybernetic functioning (1948; 1950). This view of an organization as a self-correcting organism, provides a foundation for the effectivity of utilizing data-based methods in helping organizations change, adapt and construct renewal processes.

3. Information motivates change in behavior

Cammann (1974) has cited numerous studies which indicate that individuals, groups and organizations concentrate their energy and efforts on those things which are measured. Organizations concentrate and put a priority on specific elements which are measurable. For example, if an organization chooses to measure one's attitude towards supervision, work environment, goals and objectives, clarity, etc., one probably assumes that these things are important. Rewards and sanctions are implied by the act of measurement. Pre and post measurements or longitudinal measurements of change over time indicates that enhanced performance is being striven for. Energy towards change, through the illuminating mechanism of data collection, is dependent on the perceived accuracy of the measurement; how the data is used by significant others/power and reward figures (i.e., supervisors, managers); how it is communicated as important and related to performance expectancies; and, how the data collection/feedback activity relates to the individual's ability to acquire desired outcomes (Cammann & Nadler, 1976). If the preceding antecedents are operating, positive energy towards improving one's supervisory style through enhanced interpersonal functioning could result (if this was measured and reinforced). One would also expect respondents to a survey, if involved in feedback/problem-solving meetings, to be stimulated to problem-solve issues addressed in the survey due to the waterfall effect of change expectancies and involvement in a change process.

Cammann (1974) has cited a number of studies where a manager's response to data was reactive/defensive which resulted in falsification of data or misdirected energies. This was the case when data was being used punitively in reacting to past behavior rather than a proactive response, using data as a focus for more effective behavior in the future. Thus, information can be misused if not treated as a catalyst for strategizing a future state and ensuring the non-threatening use of the data (Schein & Bennis, 1965).

4. Feedback as a change tool

Feedback is differentiated from information in that it is that information which is given back for the express purpose of bringing about change (Nadler, 1977). This feedback enables a learning outcome of correcting errors and adapting to a changing environment. Thus, Weiner's systems operation of self-regulation and maintenance of a steady state applies to non-mechanistic structures as well. Measurement of organization outputs or outcomes entail the scrutiny of organizational inputs and how the organization does its work. Feedback, like information, performs a motivating and directive function (Locke, Cartledge & Koeppel, 1968). Research indicates that the internal-motivation effects of feedback come about through goal-setting. Feedback is an inherent and necessary part of the goal-setting process (Zander, 1971). It is difficult to set goals without a baseline of current performance derived from feedback. What is measured and what performance is expected form the key ingredients of motivation and direction.

5. Change requires "unfreezing" of static behaviors

An organismic perspective of an organization would indicate that it would strive towards a state of equilibrium - individuals do the same, and both are resistant to change. Unless a sense of pain or dissatisfaction with the current state is present, no motivation to change will be present. Thus, people need to be "unfrozen" out of their inertia in order to be motivated to change (Lewin, 1947; Bennis, Berlew, Schein & Steele, 1973). An O.D. consultant is not in the business of creating pain but of facilitating awareness, new perspectives and organizational effectivity. However, "pain" or dissatisfaction with the present state requires moving beyond the status quo to a desired state. A discrepancy between present state and desired or expected performance can be brought to the fore through the mechanism of data collection and analysis (Nadler, 1977). Areas of ineffectivity, areas which were previously unmeasured, could represent a "non-conscious" (borrowed from Bem & Bem, 1979). This is especially true when all elements of a social system are not considered in the realm of effective organizational functioning and are not measured.

6. Change requires involvement

Unless those who are affected by change are part of the change process, they will be resistant, not own the change and will not be motivated to make it work (Coch & French, 1948; Vroom, 1964). Participation in a change process facilitates the "what" and "why" understanding and reinforces a positive posture. Participatory efforts take time, could create conflict and sometimes requires relinquishing control. Vroom and Yetton (1973) suggest that different degrees of participation could be more effective. He suggests that those in power still make the decisions in their domain; however, they should utilize the involvement process to inform, to problem-solve (at given levels of responsibility and authority), to create ownership, and to reinforce new behaviors. Participation can be segmented in order to manage time more effectively and efficiently.

7. Inherent values

This process has at its core a foundation of basic assumptions about people at work.

- People should be treated in the work environment with the dignity and respect they deserve as human beings in other situations.
- People support what they help to create.
- People in a work environment prefer to learn and grow with the organization.
- People want to understand how their organization functions and how their individual efforts contribute to the whole.
- People tend to act more responsibly when they are treated as adults. (Skrovan, 1983).

ORIGINS AND PROCESS OF SURVEY-FEEDBACK

Gathering data by means of a questionnaire, was developed at the Institute for Social Research at the University of Michigan (Mann, 1957; Mann & Likert, 1952; Baumgartel, 1959). After data collection, intact work groups ("family groups") would meet for feedback and problem analysis purposes with their immediate supervisor as the meeting facilitator.

This process proceeds from the top of the organization downwards. Critical behavioral problems related to leadership and group functioning are examined (Likert, 1961). This "survey guided development" was developed from Likert's model of organizational functioning (1961; 1967) by Bowers and Franklin (1972; 1976). The use of a systemic diagnosis is another feature of this design. The consultant provides a comprehensive assessment to upper management. (The author did not employ this aspect of the design as he felt diagnosis was better utilized in the feedback meetings to create ownership of the data.)

The consultant trains the meeting facilitators on how to lead a participative, problem-solving group in order to build a trusting, innovative and involved meeting environment. The consultant can also fulfill the role as data interpreter, as a resource on organizational and management issues and as a process consultant during meetings, as contracted or called upon.

Mann and his colleagues used the survey feedback model for two reasons:

1. To make questionnaires more useful to organization members through involvement in problem-solving and creating change.
2. To utilize feedback as experiential learning for supervisors/meeting facilitators.

In this way, the feedback on management and group practices should elicit clearer understanding of how one communicates and interfaces in a number of dimensional areas. This also provides information on superior and subordinate's needs and felt "pain". Interpersonal skill-building should result in a trusting, open climate where strengths and weaknesses are discussed for the purpose of positive changes. The main areas of information sought in the case-study survey were as noted in Appendix 1.

As indicated in Appendix 1, the survey has at its core a theoretical basis. Although it is not the emphasis of this particular paper to expand on the theoretical basis upon which the survey in the case-study was developed, it is highly recommended that one use surveys which tap those dimensions which have a well-researched theoretical basis and serve the needs of the users in gathering relevant data to them.

Case-Study

The author functioned as an advisor/consultant to a 500 person operations group at Monolithic Memories, Inc. (a semiconductor manufacturer in Santa Clara, California), throughout the survey-feedback process. As leader of the Quality of Company Life (QWL) Corporate Objective Team, he worked in collaboration with the operations management in implementing the survey, data synthesis, assisting in diagnosis and training managers and supervisors on how to facilitate feedback sessions. The operations group consisted of wafer fabrication operators, management members and all support groups (line and equipment maintenance and engineering, wafer fab engineers, fab planning and wafer sort). Overall data was presented to upper management and the QWL subcommittee of the operations group in order to establish baseline data on Quality of Work Life issues and identify system opportunities for improvement. Specific data for each subarea (e.g., engineering, wafer fab, planning, etc.) was presented by the respective group's management who facilitated problem identification, clarification and solving meetings with their direct reports.

The catalyst for the survey was the subject company's Quality of Company Life Corporate Objective (note Appendix 2). In concert with analyzing QWL indicators (attrition, absenteeism, transfers-out, promotions, etc.), the survey was recommended as a way to broaden the ability to diagnose present state in order to plan changes for a future state. The survey also provided a baseline in order to gauge if the improvements made had statistically significant impact (based on pre-post comparisons). A fundamental catalyst for action was the commitment of the Vice-President (of the operations group) to improving QWL through a thorough analysis of where improvements could be made, understanding of the need to follow the survey feedback process and utilization of a QWL subcommittee to oversee and be actively responsive to improving QWL.

A model of the survey-feedback process as used in the case study is presented in Appendix 3. Appendix 4 represents how the data was communicated through hierarchical levels, then how recommendations (if needing higher authority) were fed back to the QCL subcommittee.

RESULTS

The results of the survey-feedback process in the subject operations group was encouraging but was limited in possible scope as a comprehensive O.D. intervention.

The operations group managers reported that the process produced the following results:

1. Brought to awareness or confirmed problem areas.
2. Feedback sessions helped to clarify findings which were not understood by looking at the data alone.
3. Encouraged intact work group involvement in problem identification and/or problem resolution which resulted in building cohesiveness, an enhanced communication process and greater individual motivation.
4. Some management became convinced that getting feedback from subordinates and collaborating with them on resolving problems was an effective mechanism that should become a standardized practice. A number of managers decided to implement employee problem-solving teams as a results.
5. Getting specific results per shift, department and status was very useful in identifying specific problem areas. They also reported that the data was more meaningful to specific work groups as it was their data.
6. The QCL subcommittee has met monthly since the survey (1½ years ago). Just recently, they have decided to call meetings on an as-needed basis. The management has requested the assistance of an internal human resources consultant to interview management on their issues which were surfaced in the survey and which resurfaced recently. The Fab Director, who replaced the V.P. (reassigned due to a reorganization in the subject company), has been very responsive to the feedback according to his managers and the internal consultant.
7. A stronger awareness of and responsiveness to QWL issues and managerial practices which impact them has been promoted, at least in part, by the QWL effort and survey-feedback process.
8. Due mainly to progressive thinking on the part of operations management and somewhat on past improvement efforts and learnings derived from these, management is instituting a Total Quality Process (TQP) which integrates CAM, SPC, Deming, Juran, QWL and JIT philosophies and practices. The TQP will also include job redesign elements which involve problem-solving teams as an important ingredient of each employee's job role.

Shortcomings/Learnings

1. The complaints of the managers were that the process was quite time-consuming and that a number of the items on the survey seemed not to be clearly understood by the respondents. One feedback group decided to rewrite some of the items felt to be ambiguous. This indicates some expanded feedings of ownership beyond the data itself. In that the respondents varied greatly, various groups of employees should be tested on item comprehension and meaningfulness. In this case, this was only done with middle and upper management. The questionnaire definitely needs content validity and reliability tests if it is to be administered

again. The respondent group's inputs could be very valuable in modifying the instrument. Surveys which have normative data and have been shown to be valid and reliable should be sought to ensure the preciseness and usefulness of the data.

2. The scope of this intervention was limited in that expanded efforts towards comprehensive organization development and enhancement of managerial effectiveness was limited. In reference to the company as a whole, the upper management group, generally speaking, did not view the need to establish baselines on QCL by utilizing the survey or other means of measurement as a priority. Only a few operational groups within the company accomplished anything significant in regard to the Quality of Company Life Objective (note #4). Without an institutionalized measurement of the human elements of the social system, little priority and movement will occur towards improving those elements. Only in those operations where the area's specific management put a priority on QCL, and held their people accountable for results, did positive results occur.

3. The survey has not been re-administered to the subject operations group for pre-post analysis and another round of feedback. However, the Human Resources department is planning a corporate-wide survey which will utilize the survey-feedback process and give each department their own data.

4. The Quality of Life Corporate Objective was written primarily by this author and approved by the CEO and Corporate Objective Coordinator (the V.P. who managed the subject operations group). This author clearly recognizes the shortcoming of not adequately educating and collaboratively planning for a QWL effort with the upper management of the company. Lack of involvement and a shared vision of what could be accomplished, led to a lack of commitment of the players who were essential in making it an effective effort.

5. QWL must be considered as a management process and not a program or a one-time thing. In order for a QWL process to be successful, it must be integrated into the way people do their jobs on a day-to-day basis. It must become part of the culture of the organization.

6. A major driving force which will push QWL, employee involvement and other organization development strategies are quality, service orientation, productivity and return-on-investment. There is a tremendous awareness and felt pain of American industry in view of the decline in productivity, quality, and the ability to compete in a world market. Also, considering the formidable national difficulties of imbalance in trade, national debt, and need to be adaptive to takeovers and deregulation, the pain is severe indeed. If employee involvement, QWL, O.D. etc. can be integrated with the overall objectives of the corporation under the rubric of productivity or quality, the responsiveness to and likelihood of success will be greatly enhanced. Measurement of "soft" indicators (e.g., attitude surveys) should be integrated with the "hard" indicators (e.g., ROI, productivity and quality measurements, etc.) to get the full picture and attention needed to make such efforts work.

7. Data based methods provide valid images of present state and help direct future state strategies. They also serve as error-correcting, guidance systems. They are but one tool in the context of full-scale organizational change. Nadler (1977) states that feedback is a limited change tool unless combined with other multi-faceted interventions - if one is to expect significant and lasting changes. He states that the positive effects of feedback interventions are uneven and inconsistent. The varying outcomes in various departments within the subject 500 person organization seems to support the research upon which Nadler commented.

8. Organizations need to be continually aware of themselves. They can't learn how to adequately improve and adapt, if they don't obtain valid information on the function of all of their subsystems. Perhaps, one day, organizations will see the need to collect and feedback data on human processes as a central activity of the organization - as much as the budgeting cycle, for instance. Organizations may someday use data based methods to build self-correcting and adaptive human systems (Nadler, Cammann & Mirvis, 1976).

In Summary

The survey-feedback process can be a powerful tool, among many, if integrated with collaboratively planned, systemic change processes. The process utilizes total employee participation, at least, temporarily. As such, it can create an awareness of the value of employee participation if done effectively. The diagnostic aspect of survey-feedback is integral to any change effort in that it serves as a guidance-feedback system. By emphasizing QWL issues through measurement, attention to social subsystems is catalyzed.

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BIOGRAPHICAL INFORMATION

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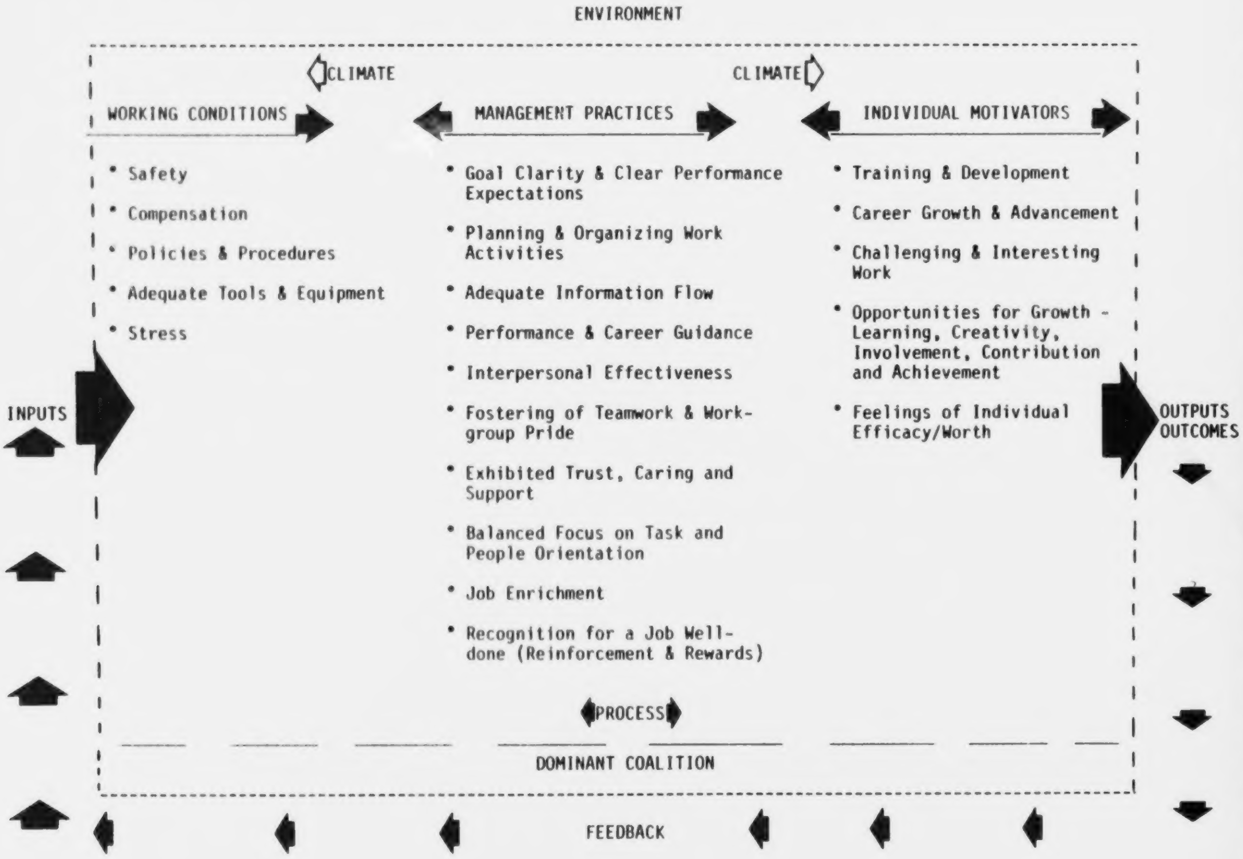
Appendix 1 - ORGANIZATIONAL CLIMATE SYSTEMS MODEL


ENVIRONMENT
CLIMATE
CLIMATE
INPUTS
OUTPUTS
OUTCOMES
PROCESS
DOMINANT COALITION
FEEDBACK

WORKING CONDITIONS

- Safety
- Compensation
- Policies & Procedures
- Adequate Tools & Equipment
- Stress

MANAGEMENT PRACTICES

- Goal Clarity & Clear Performance Expectations
- Planning & Organizing Work Activities
- Adequate Information Flow
- Performance & Career Guidance
- Interpersonal Effectiveness
- Fostering of Teamwork & Work-group Pride
- Exhibited Trust, Caring and Support
- Balanced Focus on Task and People Orientation
- Job Enrichment
- Recognition for a Job Well-done (Reinforcement & Rewards)

INDIVIDUAL MOTIVATORS

- Training & Development
- Career Growth & Advancement
- Challenging & Interesting Work
- Opportunities for Growth - Learning, Creativity, Involvement, Contribution and Achievement
- Feelings of Individual Efficacy/Worth

Based on Beer's (1980) Social Systems Model of organizations.

Appendix 2 - FY'85 CORPORATE QUALITY OF COMPANY LIFE OBJECTIVE

We will provide an exceptional working environment which allows and encourages initiative and creativity. We will accomplish this by making it a daily habit to trust and respect one another and have pride in what we accomplish together. In so doing, we will create an excellence in the quality of our company life which will match the excellence of our people.

Assessment for Action - In order for this goal to be tangible and proactive, we must assess what has worked for us and where we are in order to establish where we must go.

- ° In FY'85, each department will define certain indicators of QCL*. The chosen QCL indicators will then be monitored, analyzed and problem-solved.
- ° Attitudinal surveys will be instituted in each department - corporate wide. These surveys will be used to establish baseline attitudes and target areas for problem-solving. (A standardized instrument will be made available which can be customized to some degree.)
- *° (QCL indicator examples: attrition, absenteeism, transfers-out, promotions, laterals, accident frequency, communication meetings held, etc.)

Enhancing Effective People Management

- ° Each department will discuss and design strategies and action plans for developing, enhancing, reinforcing and rewarding effective people management behaviors.
- ° Each department, as applicable, will focus on those (first and second level supervision) who directly, on a day-to-day basis, impact the majority of employees.

Physical Work Environment

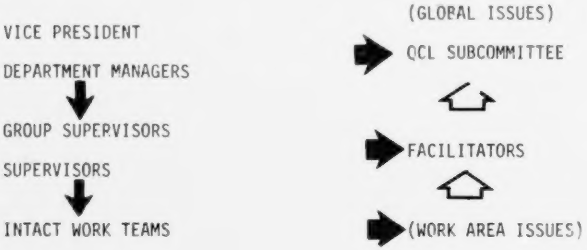
- ° Each department will provide an employee-compatible work environment relative to safety, work area comfort and peripheral environment.
- ° Establishment of safety committees and tracking/measurement is encouraged for production areas.

NOTE: QCL subcommittees (varied levels) should be the instituted vehicle to address the above objectives.

Appendix 3 - SURVEY/FEEDBACK MODEL

Categorical/specific item → Defined → Administration of questionnaire (training) → Processing of Data (training) → Analysis of data (training/consultation) → Feedback meetings (training/consultation/facilitation) → Suggestions → Responses (strategic planning) → Implementation → Re-survey respondents one year later.

Appendix 4 - DATA COMMUNICATION/SOLUTION RECOMMENDATION FLOW


(GLOBAL ISSUES)
VICE PRESIDENT
DEPARTMENT MANAGERS
QCL SUBCOMMITTEE
GROUP SUPERVISORS
FACILITATORS
SUPERVISORS
INTACT WORK TEAMS
(WORK AREA ISSUES)

Problem Solving Discussions: Making Them Creative As Well As Open

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Suspending evaluation is recognized as essential for creativity. How can quality circle discussions be creative if they are to include open and honest expressions of feelings? This presentation will focus on a model for problem solving discussions and on specific methods for making discussions creative without sacrificing openness and honesty.

I. Introduction.

Problem solving teams encounter a number of expectations. They are expected to:

- Resolve problems -- after all, this is the bottom line measurement of their performance.
- Operate under team rules -- specifically, to focus deliberations on issues rather than personalities; to hold open and honest discussions; and to decide by consensus.
- Produce creative approaches -- this includes creative approaches to defining problems and creative ideas for solutions.

Meeting the expectation of creativity can be intimidating. Fortunately, there are methods groups can learn which stimulate creativity. Chief among these is brainstorming. In fact, brainstorming is the creative method for most teams.

Unfortunately, brainstorming illustrates the limitations which many problem solving teams put on creativity. The purpose of brainstorming is idea generation -- ideas for problems to investigate, ideas for items to put in a cause and effect diagram, or ideas for possible solutions. What happens to the ideas that are produced is a separate question, for discussion of ideas is not included in the brainstorming process.

The brainstorming process fosters creativity by encouraging the suspension of internal evaluative processes which screen, edit, criticize, and quash ideas before they can be formed and expressed. Team members are expected to say ideas as they occur, as quickly as possible in just a few words. It is response not thought. This leads to free association and consequent unlocking of thoughts previously overlooked by the conscious mind. A large number of responses is encouraged -- hundreds of them if possible. The longer the list, the more likely it becomes that unusual or innovative ideas are coming out.

When ideas run out, brainstorming ends. The next task is to begin discussing the many ideas in order to find which ones are useful. This stage is not usually considered a candidate for creativity, for the internal evaluation which was screened out during idea generation returns. It is therefore possible for potentially creative ideas to be ignored or quickly passed over. Unless attention is paid to creativity during discussion, a group can easily waste many potentially creative products of idea generation.

The thesis of this presentation is that:

- The quality of discussion in problem solving teams is a significant factor in team effectiveness.
- Discussion can be creative when it is viewed as an attention directing activity requiring the continued suspension of paralyzing judgments.
- Feelings are appropriate data for team discussion and can be handled creatively when discussion is viewed as attention directing.

This thesis will be developed by looking first at creativity and how to foster it in problem solving teams. Secondly, a model of discussion will be presented. Finally, specific techniques for promoting discussion will be presented.

II. Fostering Creativity.

The model of discussion to be presented is based on the belief that creativity can be fostered -- fostered, not guaranteed. Teams can learn methods which increase the chances of creative expression.

This is true because creativity is a natural human capacity -- a normal product of the human brain. People cannot become creative because they already are creative. Yet people tend to impose limits on their innate drive for creative expression. Fostering creativity is possible by encouraging people to release and then capitalize on their inner ability.

There are two difficulties to be confronted in trying to foster creativity.

(1) There is no standard measure of creativity.

In ordinary conversation, people often use the term "creative" to imply quality. Teams review the lists of ideas generated during brainstorming to find which ideas seem more creative -- which means ideas of higher quality and greater promise. But how can people tell when something highly creative has happened?

Universal Pictures has a great deal of experience with theatrical talent. On the very same day this famous studio released two male actors because they were not considered to have enough talent -- enough creativity. These actors were Burt Reynolds and Clint Eastwood. Both actors then began making the movies that made each of them the leading male box office attraction for a period of time.

Was Universal Pictures wrong about the talent of these actors? Perhaps not, if you listen to movie critics. They have tried to introduce measurement as a guide to the movie-going public. Some critics use a simple "thumbs up" or "thumbs down" method. Others use stars so that movies of high quality receive a "four star rating." For the most part, critics have given poor ratings to Reynolds and Eastwood over the years.

But the American public gives its own rating, known as box office receipts. Eastwood and Reynolds have often told interviewers that critics are of little concern to them, but the opinion of the public makes a difference. That is why they keep using formulas that have worked before -- and will continue to use them as long as they sell.

Critical appraisal or box office receipts -- which is the true standard of creative quality?

The truth is that creativity, like beauty, is in the eye of the beholder. Very innovative ideas have gone unappreciated for centuries. Leonardo da Vinci's sketches of flying machines and submarines seem innovative to us, but for centuries they seemed mere wasted imagination.

The subjective nature of creative quality must be considered when trying to foster creativity. Many groups could review the same list of ideas. Each would reach very different conclusions as to which ideas seem most promising. This fact should be encouragement to take time to look closer at each product of brainstorming. Like diamonds and gold, really creative ideas are often hidden in what appears to be ordinary dirt.

(2) People usually resist creativity because it brings inner tension.

This is one of the paradoxes of the human mind. People have the capacity -- in fact they are driven -- to form patterns which make sense of the world. Yet people have a strong desire to avoid the inner tension that comes when changing from one set of patterns to another. We cling to old truths. We want to fall back on routine and habit.

Edward de Bono has described this phenomenon in a striking way.

> The main purpose of thinking is to abolish thinking. The mind works to make sense out of confusion and uncertainty. The mind works to recognize familiar patterns in the outside world. As soon as such a pattern is recognized the mind switches into it and follows it along -- further thinking is unnecessary. It is not unlike driving a car. As soon as you reach a familiar road you can stop figuring it out from the map, using a compass, asking for directions or even reading road signs. In a way, our thinking is a continuing search for these familiar roads that make thinking unnecessary. [1]

Another way to describe this phenomenon is in terms of paradigm formation. Paradigms are mental patterns or models which make sense of reality. For example, the Copernican model of a heliocentric solar system is one of our commonly accepted paradigms. All of us take for granted that our planet and several others are in orbit around the sun. This is a paradigm we often use without even being aware of it. But three centuries ago the general assumption was that the sun, stars, and planets orbited around the earth. When everyday observations are the point of departure, this old model seems to make more sense than the scientific model we accept. Changing to the Copernican theory involved more than recognition of scientific discoveries. What was required was a paradigm shift -- a fundamental change in accepted thought patterns. This is just what people feel driven to resist by clinging to old outlooks. In fact, it was this change which provided the basis for T.S. Kuhn when he described the phenomenon of paradigm formation and its impact on the development of scientific thought. [2]

Edward de Bono has developed an exercise which illustrates paradigm formation within groups. Two thin and flat shapes (made of paper or plastic) are distributed to a group. The instructions are to arrange the pieces into a recognizable geometrical shape. When this is done, one or two additional pieces are given, along with the same instructions. This continues until a total of six pieces have been given to the group. [3]

Most groups organize the pieces into a square and then a rectangle, which are the simplest and most obvious choices available. This pattern works until the sixth piece. By this time most groups have built up an expectation that either square or rectangle will be the correct response. Paradigm formation has taken place. Finding a workable answer which includes the sixth piece requires a paradigm shift -- a most unpleasant and frustrating experience for most groups.

Both of these difficulties must be confronted by positive strategies if creativity is to be fostered in problem solving teams. There is a need for methods which help people to be open to creativity. The subjective nature of creativity requires that people be open and receptive to newness if creative ideas are to be appreciated. The drive to form paradigms must be delayed somehow if openness is to be maintained. Strategies that delay paradigm formation are more likely to succeed than ones which require paradigm shifts.

There is agreement among a number of writers that the most productive general strategy is to emphasize methods which lower the barriers people erect to confine their native urge to be creative. People cannot learn to be creative because they already are. What they need to learn is how to unlock abilities they already have.

Eugene Raudsepp's How Creative Are You? [4] catalogs numerous "blocks and barriers to creativity." He uses three broad categories:

- Personal blocks -- messages we tell ourselves that inhibit individual creativity.

- Environmental-organizational blocks -- messages from the environment which are limiting.

- Problem solving blocks -- procedures or behaviors which impair creativity in dealing with problems.

We will discuss two positive strategies that confront the negative and paralyzing impact of these barriers. The first deals with the negative messages from ourselves and our environment by intentionally suspending negative evaluation. The second improves team performance by substituting problem orientation for solution orientation.

(1) From VOJ to suspending negative evaluation.

Negative evaluation is a series of judgmental messages we tell ourselves or hear from our environment. "Killer phrases" is a good term for these messages, for they close off thought rather than promote it.

Socrates described himself as a midwife assisting in the birth of new ideas. His assistance to pupils took the form of questioning which is still known as socratic. More often than not, he found the new idea defective. He then became an abortionist, a legitimate role in a society that did not permit the survival of infants with birth defects. Negative evaluation is an abortionist, not a midwife.

Writers improve their work by evaluating successive drafts. Improvement usually occurs as several drafts are evaluated and revised. However, a writer who holds in mind editorial standards during the writing of early drafts often experiences the paralysis of "writer's block."

Michael Ray and Rochelle Myers refer to these messages as VOJ -- the Voice of Judgment. Their advice for releasing creativity is "destroy judgment, create curiosity." [5]

Brainstorming was developed as a direct attack on the paralyzing effects of negative evaluation. But what happens to the ideas generated in brainstorming when discussion begins? Too often groups bring back the VOJ to keep them from considering all the ideas produced.

Productive discussion is evaluative in an open and constructive way. Open evaluation looks at ideas with the expectation that they just might work. Out of this bias emerges a focus on trying to find how something might work -- really checking it out to see how much promise it has. Negative evaluation has the opposite bias, for the assumption is that most of the ideas will not work.

Just as it closes off the production of ideas, negative evaluation can close off the perception of possibilities in a list of ideas. Positive evaluation, on the other hand, sharpens the perception of what can work.

One of the indicators of constructive evaluation is the continued generation of ideas. VOJ evaluation throws out ideas and closes off avenues of thought. Open evaluation plays with ideas, combines them, and finds new ones hidden within the old. New possibilities continue to emerge as discussion evaluates ideas in an open and positive manner.

(2) From solution orientation to problem orientation.

Solving problems is a bottom line measure of performance, yet productive teams spend most of their effort defining problems. It is the less productive -- and less creative -- teams that are focused on solution formulation rather than problem definition.

Solution orientation is a manifestation of the urge toward paradigm formation. People want the feeling of inner resolution of tension that comes with the adoption of a solution. Prolonging the interval of paradigm search leads to discomfort, frustration, and a growing fear of failure. Solution orientation gives in to the urge to focus on the first, and probably most obvious, solution to emerge in discussion.

Problem orientation is not easy, but it can be adopted when people adopt the following precepts.

- We don't really know what the problems are.

People usually believe they know what the problems are -- that is why they belong to problem solving teams. Discipline is required to intentionally adopt an outlook of curious ignorance. Since people don't know what the problems are, their most important job is to find, define, and document exactly what the problems are. This should consume between 80% and 90% of their work as a team.

When teams cultivate this approach, they usually discover that they did not know what the problems were. Investigation with an open mind often uncovers genuine problems which went unrecognized.

The opposite of this precept is what Gerald Weinberg calls NPS -- the No Problem Syndrome. One person describes a problem and a second person responds: "That's no problem." The second person failed to treat the first person's concern with openness -- or even to listen carefully to the problem statement. The second person thought immediately of a solution and thus pronounced: "That was no problem -- the solution was obvious." [6]

- There is not necessarily one problem statement for each problem.

Teams that are problem oriented will hesitate to grasp the first and most obvious definition of a problem. They will try alternative statements, testing out numerous points of view. They will also stay away from large, nebulous problems such as "low morale." Testing definitions will often lead to the subdividion of a problem into many smaller problem definitions.

Solution orientation, on the other hand, often focuses on what people believe are the real problems. This often means that NPS is rampant as each member of a group has individual ideas about what the true problems are -- which, of course, are my beliefs about problems. No wonder that solution orientation often leads to personality conflicts, for priority is given to defending personal beliefs rather than to open investigation.

- Discussion is encouraged and debate is avoided.

Open discussion is essential as teams seek to find, define, and document problems. The term discussion implies active consideration of many alternatives. When solution orientation appears, discussion turns into debate.

Debate is adversarial, not exploratory. For example, in a political debate candidate A says: "Choose me. I am conservative and believe in fiscal responsibility. My opponent, as you know, is a big spending liberal." Candidate B counters. "Choose me. I believe in peace abroad and equity at home. My opponent, as you know, is a hawk in foreign policy and favors the rich in domestic issues."

An exchange like this does not explore the issues. Voters are sold rival paradigms. Choice, not discussion, is the point of debate. And the paradigm chosen will be the basis on which one winner will approach problems.

Debate takes subtler forms in problem solving teams. When discussion narrows to a few alternatives, debate can appear if members have decided which alternative they want to choose. Members then try to sell each other on the alternative they prefer.

On the other hand, problem oriented discussion seeks to eliminate premature choice. Discussion that is truly open and exploratory involves all members in active consideration of each alternative.

III. Creative Discussion.

Problem solving teams can extend creativity past the idea generation phase into the discussion phase of their work. To do so, they must adopt a new model of discussion.

The old model usually goes like this:

- Topic -- the subject for group consideration.
- Generation or collection of ideas or data -- gathering materials related to the topic.
- Discussion -- the examination, clarification, and organization of the previous data for decision.
- Decision -- the completion of the cycle, made possible through narrowing that is accomplished in discussion.

This model expands on the topic in the second phase, but then immediately begins to narrow the field. Discussion is seen as preparation for decision rather than as a continuation of the expansion of the second step.

Brainstorming often illustrates this model. Teams use brainstorming to accomplish the second phase of the model. Then they use discussion to clarify, screen out, and narrow down the field of ideas in preparation for decision. Openness and honesty of expression are encouraged, leading most often to evaluative conclusions which further narrow the range of ideas.

Behind this model lies a series of "should" messages about discussion.

- Discussion should be spontaneous.

If people want to discuss something, that is great -- if they don't, just move on. Feelings should be honored, so do not linger over ideas people say they do not like.

- Discussion should be productive.

It is important to move along rather than stall out in long-winded discussions that seem to go nowhere. Seemingly aimless discussion is wasted time.

- Discussion should lead to decision.

It is especially frustrating to seem near consensus and then to discover hidden disagreements. The appearance of conflict or disagreement at the latter end of discussion is considered a setback. Discussion should end as soon as the group is ready to reach consensus, otherwise time will be wasted and people will become impatient at lack of progress.

These messages have the ring of the VOJ. They have the effect of hurrying paradigm formation rather than delaying it.

An alternative model is found in Edward de Bono's 3 step thinking process. He calls it the TEC framework. [7]

- T = target or task.
- E = expand and explore.
- C = contract and conclude.

This model places idea generation, data collection, and discussion in the expanding and exploring phase. Contracting and concluding are treated entirely separately, thus severing the role of discussion as mere set up for decision. Exploration represents a use of discussion as positive evaluation, of looking for ways to make ideas workable. Expansion implies that discussion continues to generate ideas rather than narrowing them down.

The TEC framework points to uses of discussion that are creative -- uses which are excluded by the "should" messages of the old model.

- The purpose of discussion is to explore by directing attention to the many possibilities present in ideas.

Because this kind of exploration is not the usual result of spontaneous discussion, teams are encouraged to use attention directing techniques to foster genuine openness and to delay the urge to seek solutions.

- Data generation is a legitimate product of discussion.

Discussion is an expanding process rather than a closure process. Attention directing techniques are helpful in organizing the increasing flow of data and preventing the tendency to listen to negative messages about wasting time in aimless discussion.

- Individual and group feelings are appropriate data for discussion.

This view of discussion does not discourage open and honest expressions of feelings. The difference is that such feelings are to become data for group discussion rather than judgments seeking to close off consideration. Feelings are data to be expanded upon and explored just like any other data before the team.

Since the TEC framework points to entirely new attitudes toward discussion, teams are not likely to adopt them spontaneously. The use of attention directing methods is an important strategy for developing habits that promote creative discussion.

IV. Attention Directing Techniques.

Attention directing methods need not be complicated. They are simply question asking procedures which direct thinking, whether individually or as a group. Usually, the simpler ones are most convenient for team use.

This section will describe six methods. These were selected because of their relative simplicity.

(1) Cause and Effect Diagrams.

Most teams are already familiar with C&E diagrams. However, viewing them as attention directing methods is quite different from the way Professor Ishikawa recommends. The difference in viewpoints is the difference between our two models of discussion.

The usual explanation of C&E diagrams presents them as a way of collecting and organizing data on the causes of problems. Teams are told to identify the problem statement as the effect. Possible causes are then gathered and arranged in either a fishbone pattern or in sequential steps (depending on whether the diagram is to be a fishbone diagram or a process classification diagram). When the diagram has been completed, team discussion begins narrowing the possible causes to those which are "true causes." Discussion, therefore, is intended to eliminate data from consideration in order to find the one correct solution.

When the TEC framework is applied to C&E diagrams, they appear in a new light.

- They organize large amounts of seemingly confused data into a visual framework for exploration.
- Exploration is encouraged in developing diagrams as teams discuss relationships among data and decide where to place data. It is possible to show an item at multiple points in the diagram to illustrate many possible relationships that warrant exploration.
- Expansion and continued idea generation are possible without promoting a feeling of chaos. Any series of branches in a diagram can be turned into a separate diagram which can still be related to the general framework of the master diagram.
- When exploration and expansion are completed, a series of diagrams exist to document the data from discussion. This data is organized and ready for the "contract and conclude" phase.

(2) PMI -- Plus, Minus, Interesting.[8]

This is Edward de Bono's term for a simple questioning procedure most of us have used at some time.

- P = plus (+), good points, strengths, things I like.
- M = minus (-), bad points, weaknesses, things I don't like.
- I = interesting (?), "wouldn't it be interesting if ...," not sure whether I like it or not.

Imagine taking a list of ideas generated in brainstorming and doing a PMI on each item. The effect would be to explore many sides of each item. Data would also be expanded to include feelings as data rather than as judgments. The benefits would be increased if each member were asked to name both pluses and minuses in roughly equal number, thus preventing members from moving toward a decision rather than looking at all points of view.

A team would not be inclined to write out the PMI for a list of 100 ideas. But it would be a good idea to do a written listing for each of the 3 or 4 choices the team decides are most significant.

Effective use of PMI can promote open and honest expressions of feelings. Likes, dislikes, and uncertainties are expressed in this technique. It is often interesting to see that the same item will be given a plus by one person, a minus by another, and a question mark by a third. Discussing why an item can be viewed so differently promotes increased exploration.

PMI can also be combined with other methods, such as C&E diagrams. Discussion would then produce diagrams with pluses, minuses, and question marks on them.

(3) Advantage-Disadvantage. [9]

This method, described by Arthur VanGundy, is useful in discussing several alternatives rather than a list of ideas from brainstorming. Here is a simplified use of the method.

- Identify alternatives.
- Identify criteria for rating alternatives. This can be done through idea generation techniques.
- List the criteria in the first column of a chart. Mark out space for other columns to be headed by each of the alternatives being rated.
- Discussion then takes one of the criteria at a time and explores whether it is an advantage or disadvantage for each of the items being rated. A mark is placed under each alternative to show group opinion.
- When each of the criteria has been discussed, the team has a visual display of relative advantages and disadvantages of each alternative.

This method is similar to the PMI. VanGundy recommends separate charts for each alternative. It seems to me that most groups would prefer to have the data reflected on a composite chart as recommended above. VanGundy also recommends making a check to show an advantage. Nothing is put if there is a disadvantage. My recommendation is to use PMI markings. In this way the chart will reflect the range of opinions in the team rather than forcing a decision on advantage versus disadvantage. Discussion which aims at exploration and expansion is not the place for forcing choices.

(4) APC -- Alternatives, Possibilities, Choices.

A simple question is at the heart of this method: "Are there other alternatives, possibilities, or choices that we have not considered?"

The time for this question is when a team is about to make a decision. This is one way of making a possible decision into the T step of the TEC process.

This is not an idle question to be followed by silence. The next step is to generate ideas as to alternatives -- to seriously concentrate on finding approaches that may have been missed.

(5) CAF -- Consider All Factors.

This is another question for when decision seems imminent. "Have we considered all the possible factors? Is there anything we may have left out?" Once again, this is not a pointless question. It is followed by idea generation to produce factors that may have been overlooked.

(6) C&S -- Consequence and Sequel.

Our last technique is another question that is raised when a team is ready to decide. "Are there consequences that we have not anticipated?" De Bono recommends developing charts listing possible consequences for several different time periods, for most people will concentrate on today's results rather than tomorrow's consequences. A useful chart for problem solving teams would identify C&S for time frames of the next six months, next year, and next two years.

V. Conclusion.

As was said earlier, creativity can be fostered but not guaranteed. When barriers are lowered, individual creativity can be released.

The model of discussion based on the TEC framework and the methods just described can foster creativity in discussion. The close ties between discussion and decision making are cut in order to make discussion into an expanding and exploratory activity.

Methods can be used mechanically. They can also be used enough to become habitual so that they become increasingly spontaneous. Problem solving teams that cultivate their creativity in discussion will find themselves becoming more effective.

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3. Edward de Bono, Lateral Thinking (New York: Harper and Row, 1973), pp. 31-35.
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6. Gerald M. Weinberg, Becoming A Technical Leader (New York: Dorset House Publishing, 1986), pp. 65-68.
7. De Bono's Thinking Course, pp. 151-153.
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9. Arthur B. VanGundy, Techniques of Structured Problem Solving (New York: Van Nostrand Reinhold Company, 1981), pp. 148-150.

Biographical Information.

For thirteen years Dr. Edward G. Simmons has held a variety of managerial positions with the Georgia Department of Human Resources. The last four years have been devoted to human resource development, with special attention to quality circles and other forms of team building.

A native of Savannah, Georgia, Dr. Simmons attended Mercer University in Macon, Georgia. He completed courses for a doctorate in history at Vanderbilt University. He then taught briefly at Appalachian State University. He joined the Georgia Department of Human Resources following a tour of duty with the Air Force at the end of the Viet Nam Conflict. He then completed work on his doctorate.

Dr. Simmons is a charter member of the Atlanta Chapter of the I.A.Q.C. His areas of specialty include leadership development, team building, creativity, and problem solving styles of leadership.

Quality Improvement Story: A Structure for Teams to Improve Their Effectiveness and Efficiency

Ric Simon
Florida Power & Light Company

ABSTRACT

The basic problem solving steps have not changed, but the degree of sophistication for dealing with each step has increased tremendously. For example, it was perfectly normal for our best teams to brainstorm problems, multivote, and then select one to work on. Now, our best teams are validating that they are working on the most significant problems based on data, and they are doing a thorough current situation analysis before proceeding to solve the problem. Both teams just described have used the process, but it is obvious which team is the most factual, objective, and sophisticated in the use of problem solving techniques. All teams must start somewhere and mature, but the teams that will be recognized are the ones that demonstrate the most effective use of the problem solving process and make decisions based on facts. The Quality Improvement (QI) Story concept and form (wall chart) is a communication structure that will guide teams in this direction.

INTRODUCTION

The QI Story concept and form is derived from an activity called "Storyboarding." Storyboarding is a project planning tool that can help any company ease the journey to quality improvement through enhanced visualization, creative thinking and team involvement. This visual structure for planning and organizing a project using fixed or portable wall poster boards, will improve a team's effectiveness and efficiency while they progress through the problem solving process.

HISTORY OF THE STORYBOARD

The Storyboard concept was originated in 1932 by Walt Disney Studios. It was developed because Walt Disney was dissatisfied with the inefficiency and lack of control over the traditional method of making a cartoon. The animators simply made up the story as they went along, adding and substracting gags in a helter-skelter fashion and hoping the whole thing would hang together when it was finished. Disney's first attempt to improve control was to establish a Story Department and to staff it with those animators who had the greatest gift of concocting useful plot lines. He thus firmly and forever separated word writers from animators in the early creative stages of a production, though they all came together frequently as work proceeded. Disney soon found out that this method lacked the most important element of a cartoon, its visual humor, which could be observed, criticized and improved. The answer was the Storyboard, which was nothing more elaborate than a series of sketches of the key moments of an action sequence pinned up in the order of their occurrence. On the surface this seems like a minor innovation. However, a way of seeing a cartoon prior to the beginning of the expensive animation process was a significant step toward the solution of a problem that had nagged animation from its beginning.

Disney credited the Storyboard technique to Webb Smith, a one time newspaper cartoonist who began his career at Disney Studios as an animator, then switched to the Story Department. Smith retained his habit of sketching out his gag sequences rather than writing them down. He generally spread these all over the office floor, which one day he abandoned in favor of pinning the sketches on the wall. At first, Disney was furious because he felt the holes left by the pins would ruin the walls, for which he had just spent a good deal to redecorate. This conflict between artistic order and tidy housekeeping was resolved by first using rails and clips and later ordering quantities of corkboard. This technique quickly became a part of the studio's planning procedure. Storyboards kept branching out into many uses. In fact, Disneyland and Walt Disney World were operationally planned using Storyboarding.

LESSONS FROM DISNEY'S EXPERIENCE

There are still people today that try to solve quality problems the same way the early animators developed cartoons. They work in a helter-skelter manner, adding and subtracting things as they go along and hoping some improvement will occur when they are finished.

Although Storyboarding may seem like a minor innovation, full length animated features would not have been possible without it. Seeing a cartoon prior to the beginning of the expensive animation process is no different than visualizing all the steps of a quality improvement project before an expensive investigation is started.

JAPANESE QC STORY DEVELOPMENT

The Japanese, through their nationwide total quality control activities, developed the concept of their Quality Control (QC) Story. It was originally named by Mr. Nogawa, President of Komatsu, for the purpose of reporting improvement activities. Professor Ikezawa and others expanded the procedure to include its use as a guide for solving a problem.

FLORIDA POWER & LIGHT COMPANY'S QI STORY DEVELOPMENT ACTIVITIES

The company wide Quality Improvement Program that has established Florida Power & Light Company (FPL) as a national leader in the quality movement, continues to flourish and take on new dimensions.

Not content with resting on the laurels of acclaim that the FPL Quality Improvement Program has received, Mr. Hudiburg, Chairman of the Board and Chief Executive Officer, established a twelve member task team to further investigate quality at FPL. These members were all hand-picked middle managers with credibility at all levels of the organization. They were placed on full-time, temporary assignment to determine the additional steps FPL must undertake to achieve "Total Quality Control" (TQC).

This team studied extensively the concept of TQC, and participated in discussions with leaders of outstanding U.S. and Japanese companies. Upon completion of their study, they issued a report to management that recommended eleven areas where action was needed to fully implement TQC at FPL. With the concurrence of executive management, the team formed four committees, and worked on establishing the recommended course for the company in 1986.

One of the eleven recommendations included the need for a revision to the existing method that teams used to report completed problem solving projects. The revision was to allow for documentation of overall team activities and promote those steps that lead to the accomplishment of TQC.

A particular incident which inspired this recommendation occurred while the twelve member task team was observing a management presentation at a Japanese company. Even though it was in Japanese they were able to understand and follow the presentation. The team told their QC Story with a logical flow of data, displayed through basic statistical quality control techniques; such as Pareto charts, Cause and Effect diagrams, and control charts.

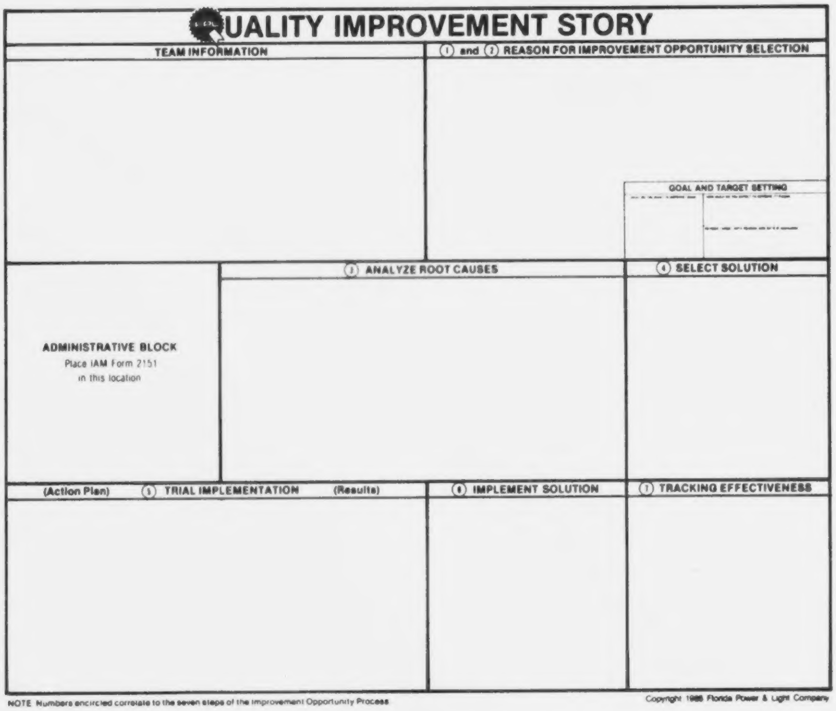
An eight member QI Story task team was formed with cross-functional facilitators and staff support, to follow through with the recommendation and develop a workable form for company wide implementation. The customers needs and reasonable expectations were agreed upon and became the task team's objectives, as shown below:

- Provide a visual document for the team to track their progress through the problem solving process.
- Reinforce the use of statistical and analytical techniques, thereby, assisting the team to make decisions based on facts.
- Enhance communication for all interfacing with team.
- Minimize duplication of paperwork while maintaining consistency of terminology.
- Provide one method for aiding the team in preparation of their management presentation.
- Reinforce tracking the effectiveness of a team's implemented solutions as a part of daily work.
- Develop a flexible form that can evolve with the maturing of a team and the Quality Improvement Program.

The QI Story task team followed a three stage implementation process. First, a rough draft form was developed and limited piloting began. Second, the task team analyzed feedback from the pilot teams and interfacing support groups. Four additional key points (shown below) surfaced with piloting, which supported the original objectives.

- Serves as an information tool for management versus a management control tool.
- Helps teams understand difference between process steps and the techniques/tools.
- Standardization of management presentations and minimizes time for preparation.
- Provides team growth towards self-facilitating.

With this feedback, a final draft was developed with guidelines printed on the form. These guidelines provided for each problem solving process step an objective statement, key activities, and recommended tools/techniques with an example. Trial implementation was opened to all, inorder to determine the acceptance, familiarization (ability to use) and training needs for company wide implementation. Finally, third, the task team surveyed the customers including management, to verify that their needs were met, and analyzed this feedback to develop the final QI Story form and guidelines, shown below and on the following pages.



QUALITY IMPROVEMENT STORY

TEAM INFORMATION

① and ② REASON FOR IMPROVEMENT OPPORTUNITY SELECTION

GOAL AND TARGET SETTING

ADMINISTRATIVE BLOCK
Place IAM Form 2151
in this location

③ ANALYZE ROOT CAUSES

④ SELECT SOLUTION

(Action Plan) ⑤ TRIAL IMPLEMENTATION (Results)

⑥ IMPLEMENT SOLUTION

⑦ TRACKING EFFECTIVENESS

NOTE Numbers encircled correlate to the seven steps of the Improvement Opportunity Process

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QI STORY GUIDELINES

TEAM INFORMATION

A PLACE TO:

- Show team name, members and pictures
- Display team meeting minutes
- Solicit comments using Post-It notes
- Show planning steps, completion dates and responsibilities
- Recognize individuals who provided support to team
- Display additional data, if necessary

① and ② REASON FOR IMPROVEMENT OPPORTUNITY SELECTION

PROCESS STEP & OBJECTIVE

Collect Improvement Opportunities
Collect improvement opportunities and problems from the work area. **(Show collection tools until improvement opportunity is selected.)**

KEY ACTIVITIES

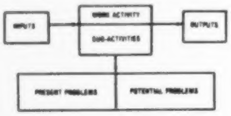
- Establish the current status of opportunities.
- Review work areas, activities and quality indicators.
- Ask for management suggestions.
- Survey internal/external customers.
- Interview individuals in the work area.
- Review manager's policy deployment plan and top priority job.

TOOLS/TECHNIQUES

- Interviewing
- Critical Activity Chart
- Brainstorming

EXAMPLE

CRITICAL ACTIVITY CHART



PROCESS STEP & OBJECTIVE

Prioritize and Select Improvement Opportunities
Identify impact of improvement opportunities and choose the one which the team will address. **(Show need for improvement.)**

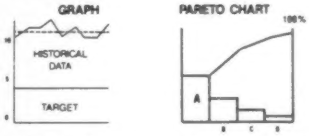
KEY ACTIVITIES

- Relate problems to daily work.
- Determine impact of problems.
- Rank problems by their impact on internal/external customers.
- Write clear problem statement.
- Establish valid requirements and quality indicators.
- Develop a desired goal and target.

TOOLS/TECHNIQUES

- Pareto Chart
- Cost Estimate
- Multivote
- Problem Selection Matrix
- Graphs
- Checksheets

EXAMPLE



NOTE

- Brainstorming, multivoting and the problem selection matrix are useful tools for building group consensus, but will not graphically display the need for improvement.
- Quality indicators are measurements of the degree and/or frequency of conformance to valid requirements. Not only are they useful to identify improvement areas, but can graphically display the need.
- Teams should develop a desired goal and target, allowing flexibility to adjust target as they progress through the process.

③ ANALYZE ROOT CAUSES

PROCESS STEP & OBJECTIVE

Analyze Root Causes

Identify and verify the most significant root causes of the problem. **(Show identification and verification tool used.)**

KEY ACTIVITIES

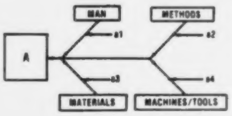
- Keep asking "what causes this?" or "why does this condition exist?"
- Identify the possible root causes. Is it a root cause or symptom?
- Narrow down to the most significant root causes.
- Analyze using quality control tools.
- Determine how much of the problem each root cause, when corrected, will resolve.

TOOLS/TECHNIQUES

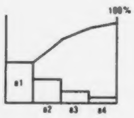
- Pareto Chart
- Cause and Effect Diagram
- Histogram
- Concentration Diagram
- Scatter Diagram
- Root Cause Evaluation Matrix

EXAMPLE

CAUSE AND EFFECT DIAGRAM (FISHBONE)



PARETO CHART



④ SELECT SOLUTION

PROCESS STEP & OBJECTIVE

Select Solution

Identify and select solutions which will solve most significant root causes of the problem. **(Show the identification and selection tools used.)**

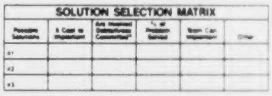
KEY ACTIVITIES

- Collect solutions that solve most significant root causes.
- Evaluate how solutions will meet internal/external customer needs.
- Discuss solutions with people most affected.
- Consider if team can implement.
- Estimate resources needed.

TOOLS/TECHNIQUES

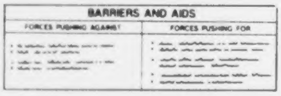
- Solution Selection Matrix
- Structure Tree
- Barriers & Aids

EXAMPLE



SOLUTION SELECTION MATRIX

Possible Solutions	$ Cost to Implement	[illegible]	% of Problem Solved	Team Can Implement	Other
#1					
#2					
#3					



BARRIERS AND AIDS

FORCES PUSHING AGAINST	FORCES PUSHING FOR
[illegible]	[illegible]

⑤ TRIAL IMPLEMENTATION

PROCESS STEP & OBJECTIVE

Trial Implementation

Test effectiveness of proposed solutions and identify modifications to final solution. **(Show the Action Plan and Trial Implementation results.)**

KEY ACTIVITIES

- Develop an action plan using the 5 W's + 1H. (Who, What, When, Where, Why and How)
- Assign responsibility for action items.
- Notify others affected.
- Determine whose approval will be needed.
- Request approval for trial run.
- Use Trial Implementation Checklist.
- Check status of quality indicator.

TOOLS/TECHNIQUES

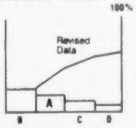
- Pareto Chart
- Control Chart
- Trial Implementation Checklist
- Graphs

EXAMPLE

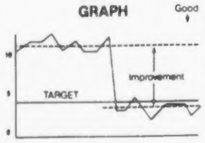
TRIAL IMPLEMENTATION CHECKLIST

Action Step	Assigned To	Evidence of Completion	Status	Remarks/ Further Action
#1				
#2				
#3				
#4				
ETC				

PARETO CHART



GRAPH



⑥ IMPLEMENTATION SOLUTION

PROCESS STEP & OBJECTIVE

Implement Solution

Ensure the solution becomes part of daily work and is properly implemented. **(Show the Implementation Checklist.)**

KEY ACTIVITIES

- Develop Implementation Checklist using the 5W's + 1H.
- Make management presentation.
- Obtain approval for final implementation.
- Modify procedure and standards to assure solution becomes part of daily work.
  - — Establish or revise feedback loop for work flow
  - — Determine training needs
  - — Make recommendations for replication

TOOLS/TECHNIQUES

- Implementation Checklist

EXAMPLE

IMPLEMENTATION CHECKLIST

Action Step	Assigned To	Evidence of Completion	Status	Remarks/ Further Action
#1				
#2				
#3				
#4				
ETC. . . .				

⑦ TRACKING EFFECTIVENESS

PROCESS STEP & OBJECTIVE

Tracking Effectiveness

Monitor and ensure the ongoing effectiveness of the solution.
(Show the Quality Indicator.)

KEY ACTIVITIES

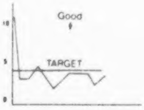
- Track indicator.
- Assign follow-up responsibilities using 5 W's + 1H.
- Determine frequency of checking.
- Determine distribution of tracking report.
- Check and act on results.

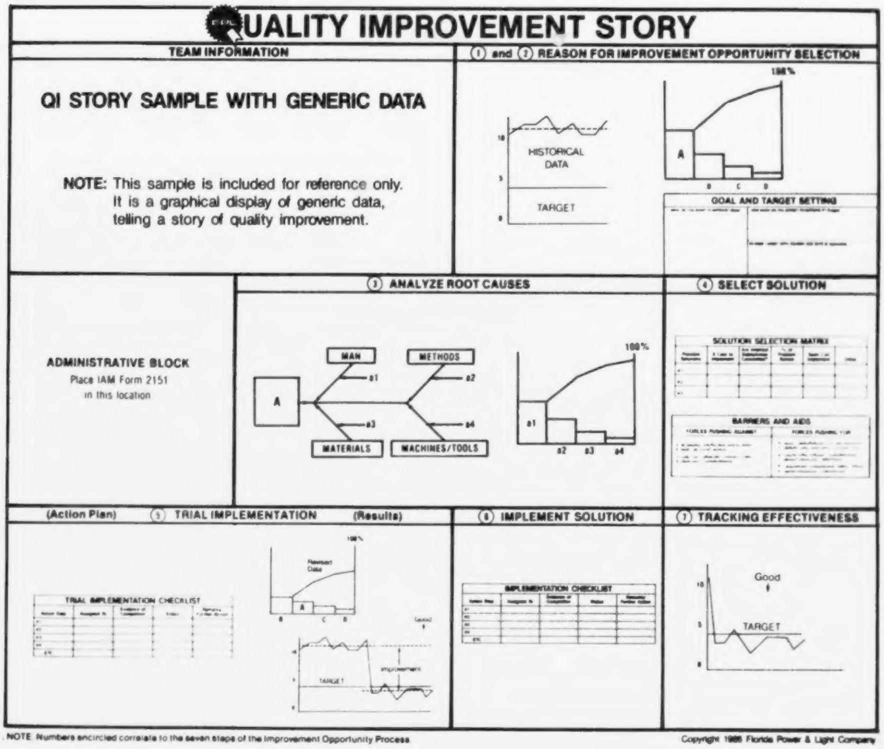
TOOLS/TECHNIQUES

- Graph
- Control Chart

EXAMPLE

GRAPH





QUALITY IMPROVEMENT STORY

TEAM INFORMATION

QI STORY SAMPLE WITH GENERIC DATA

NOTE: This sample is included for reference only.
It is a graphical display of generic data,
telling a story of quality improvement.

① and ② REASON FOR IMPROVEMENT OPPORTUNITY SELECTION

GOAL AND TARGET SETTING

ADMINISTRATIVE BLOCK
Place IAM Form 2151
in this location

③ ANALYZE ROOT CAUSES

④ SELECT SOLUTION

SOLUTION SELECTION MATRIX

BARRIERS AND AIDS

(Action Plan) ⑤ TRIAL IMPLEMENTATION (Results)

TRIAL IMPLEMENTATION CHECKLIST

⑥ IMPLEMENT SOLUTION

IMPLEMENTATION CHECKLIST

⑦ TRACKING EFFECTIVENESS

10
HISTORICAL
DATA
5
TARGET
0
100%
A
B
C
D
MAN
METHODS
a1
a2
A
a3
a4
MATERIALS
MACHINES/TOOLS
100%
a1
a2
a3
a4
100%
Revised
Data
A
B
C
D
Good
10
5
TARGET
improvement
0
Good
10
5
TARGET
0

NOTE: Numbers encircled correlate to the seven steps of the Improvement Opportunity Process.

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FPL'S QUALITY IMPROVEMENT PROGRAM HISTORY & OVERVIEW

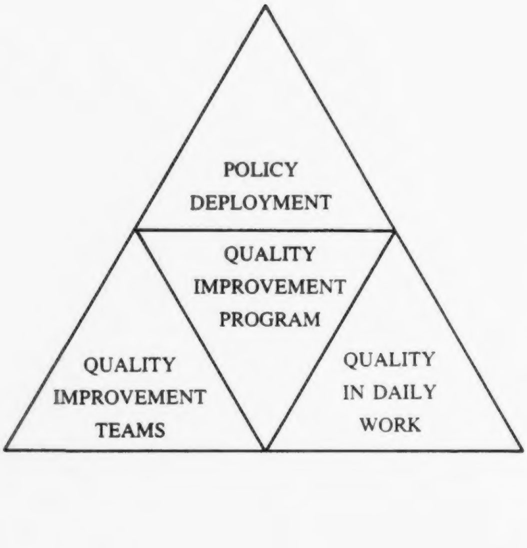
What was to become FPL's Quality Improvement Program began in the early 1970's, when the company started formalizing quality assurance activities during the construction of two nuclear power plants. In 1976 quality planning was included in power plant construction to improve reliability. In 1979 formal, cost effective, quality control techniques were applied to activities in other areas of the company, such as Transmission and Distribution and Distribution Engineering.

The success of these initial steps led management to evaluate the feasibility of installing a company wide Quality Improvement Program (QIP). Several different approaches were studied, but most had significant weaknesses when applied to a service industry, such as a public utility. The decision was then made to develop our own program utilizing the best approaches and concepts from some exemplary American and Japanese companies.

FPL's Quality Improvement Program was formally launched through Quality Improvement Teams in 1981, and by 1986 over 1400 teams were involved at every level and in every department of the Company. In 1985, management initiated the Policy Deployment process focused on projects for quality breakthrough. Finally in 1986, the quality process was extended to every employee through the Quality in Daily Work process and the teaching of basic Quality Control tools.

The QIP Triangle, shown below, is a visual representation of the three aspects of Quality Improvement.

Quality Improvement Triangle



Quality Improvement Teams

Teams provide a structured environment for employees to work together for these goals:

- Improving the quality of the products and services we provide.
- Developing the skills and abilities of all employees.
- Promoting communication and team work.
- Enhancing the quality of work life.

Policy Deployment

Targets the achievement of breakthroughs by the concentration of company efforts and resources on a few priority issues. The goals are:

- An increased level of performance in areas selected for breakthrough.
- Improved communication of company and department direction.
- Improved horizontal coordination within the company.
- Broad company participation in the development and maintenance of a corporate vision, fundamental objectives and tactical agenda items.

Quality In Daily Work

Quality in Daily Work is the application of the Plan/Do/Check/Act Cycle (PDCA) to all activities necessary to meet customer needs and reasonable expectations on a daily basis. The goals are:

- Maintain the gains achieved through improvement projects.
- Consistency and standardization where needed in operations and results.
- Clarification of individual contributions towards the achievement of customer satisfaction.
- Incrementally improve daily operations.

The QI Story concept has evolved into Policy Deployment and Quality in Daily Work activities, thereby, becoming institutionalized into FPL's quality culture.

CONCLUSIONS

The QI Story concept and form is a communication structure that will guide teams towards effective and efficient use of the problem solving process and to make decisions based on facts. This is achieved by enhanced visualization, creative thinking and focused team involvement.

As the application of QI Story evolves into management level presentations (Presidential reviews, management reviews, Policy Deployment reviews, etc.) as well as team presentations, it becomes institutionalized into a company's quality culture. The QI Story can then serve as a vehicle for common dialogue of quality improvement between executives, managers, supervisors, facilitators,team members and other employees, not just during formal presentations, but most important during daily activities.

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Betker, H. A., "Storyboarding: It's No Mickey Mouse Technique," The Juran Report, No. 5, Summer 1985.

Coakley, J. W., "QI Story" unpublished report, FPL, August 5, 1986.

FPL's QI Story (original) Pilot Team Leaders:
Gerry Boley
Jim Causier
Gary Koester
Juan Rodriguez
Don Schleicher
Paul Voss
Carl Ward
Cathy Zechman

FPL's QI Story Task Team Members:
Jenny Baum
Harry Brown
Jim Coakley
Bruce Kelsey
Bill Marcacci
Brian Mooney
Mike O'Neil
Ric Simon

FPL's Total Quality Promotion (twelve member) Task Team, QI Story Representatives Jack W. Gomm and Homer Latham.

Ura (Mr.), "Record of QC Circle Activities," Kanto Auto Works, Ltd., Japan

* * * * * * * * * * * * * * * * *

BIOGRAPHICAL INFORMATION

RIC SIMON is a Quality Specialist in the Quality Improvement Department of Florida Power & Light Company. His key responsibilities involve the development, implementation and monitoring of activities related to team effectiveness; effective QIP supervisors; managers support of teams; and the Recognition Program.

Ric's nine year background in employee involvement programs includes: Quality Manager for an electronics firm; operating his own Quality Circles Management Consulting service; and as a Quality Circles Coordinator/Quality Engineer for a fluid power firm. He was instrumental in the development of a two-year Quality Control Technology Program for a junior college, receiving recognition from the Governor of Florida.

Ric has a Bachelor's Degree in Mechanical Engineering and an Associate Degree in Fluid Power Engineering from the Milwaukee School of Engineering. He has been a frequent speaker at seminars/meetings on subjects related to Quality Circles and has supported the IAQC local chapters in Sarasota, Tampa Bay and Miami, as an active member.

Innovative Problem Analysis in Engineering

H. David Sloan, P.E.
The M. W. Kellogg Company
Houston, Texas

ABSTRACT

Quality Circles have been around the manufacturing industry in the United States for several years, but they are only now beginning to catch on in the professional ranks and in organizations that are primarily staffed by professionals.

The M. W. Kellogg Company is a leader in engineering, design, and construction of refinery, chemical, and petrochemical plants worldwide. Kellogg staff is made up of a high percentage of graduate engineers with over half of them being registered Professional Engineers. Successful integration of Quality Circle concepts into an organization such as Kellogg required that innovative changes be made in the traditional manufacturing application of Quality Circles.

This paper describes the development of Engineering Involvement Teams at Kellogg and how Quality Circle concepts which were developed for the manufacturing environment have been adapted to an organization staffed almost wholly with engineering professionals. Unique attributes of Kellogg's Engineering Involvement Teams are presented so that others may learn from this successful program. Special problems encountered in the startup of Kellogg's Engineering Involvement Teams are discussed and examples are given which describe how Engineering Involvement Teams have made a real contribution to Kellogg's productivity growth and quality achievement.

INTRODUCTION

Engineering, design, and construction for the process and energy industries has traditionally been one of peaks and valleys. The large projects seen during the 1970's have disappeared. Firms which once geared up for billion plus dollar contracts are now competing for projects valued in the tens of thousands of dollars. The current slack period in the engineering business has turned out to be a long one. Declining and unstable oil prices, an oversupply of crude, a general world economic recession, and political uncertainty have teamed to kill interest in the expansion of processing capacity.

The M. W. Kellogg Company (Kellogg) is a leader in engineering, design, and construction of refinery, chemical, petrochemical, and coal gasification plants worldwide. Kellogg is one of the companies which has had to retrench and rethink how to remain competitive in today's marketplace. Innovations in sales, engineering techniques, new applications, and work methods separate companies that thrive in the new, more competitive atmosphere from those which will wither while clinging to work methods left over from the boom years of the 1970's. Engineering Involvement Teams which are discussed in this paper are one facet of a company wide quality and productivity improvement emphasis. The commitment to total quality at Kellogg might be the topic for another paper. This paper centers around only one aspect of the program, the Engineering Involvement Teams.

In the past, superior technology has been a major factor in determining which of several competitors won a specific project. Today, cost conscious clients are choosing project winners not only based on technology, but also on the efficiency with which a project may be executed. Kellogg continues be a leader in licensed process technology and continues to stay at the cutting edge of new applications. Work methods are constantly being reviewed to see how they may be made more efficient. Engineering Involvement Teams are one way that engineers may contribute ideas toward better productivity.

This paper describes the history of Engineering Involvement Teams at Kellogg, and how Quality Circles concepts have been adapted to work where the staff consists of a high percentage of engineering professionals. Unique attributes of Engineering Involvement Teams are described and special problems are discussed. Engineering Involvement Teams have made a real contribution to productivity and quality engineering at Kellogg and examples of team results are given.

QUALITY CIRCLES

Quality Circles have been around for many years and have met with wide success in the manufacturing sector of industry. Some large manufacturing companies have also instituted Quality Circles within engineering and management ranks with some success. Service organizations have also successfully integrated classic Quality Circle concepts into the workplace with notable examples coming from the airline, medical and banking industries.

Quality Circles have also been tried by other engineering contractors, but these programs have met with only limited success. The most successful applications of Quality Circles in engineering contracting firms have been in the production drafting areas. There have also been successes within large groups of people who were working on the same project.

The Engineering Involvement Teams concept at Kellogg is aimed at the engineering professional. References to Quality Circles are purposely kept to a minimum, even though the foundation of the Engineering Involvement Team program is similar to that of Quality Circles.

ENGINEERING INVOLVEMENT TEAM CONTRIBUTIONS

Today's business climate is such that an organization's total capabilities must be realized. Employee commitment is now even more important than ever. Finding ways to increase and harness that commitment is necessary. It is important to let everyone know that each person can make a difference.

Almost every situation demands the skills of several people to assure that all aspects are recognized. Each person comes from a different background and contributes from a different viewpoint.

Engineering Involvement Teams are a vehicle which allows engineers to concentrate on productivity or quality improvements in a group setting. These teams, working outside the pressures of job performance and schedule can concentrate efforts and stick to it until every aspect has been thoroughly analyzed. Team members all participate in an open forum throughout the process. The team atmosphere allows the creativity within each member to flow uninhibited by the fear of being pre-judged by others. Individual competition is set aside within the team. In some cases, the team activities have taken on the look of miniature projects as the members work together toward a common goal. This spirit of cooperation carries over into the workplace for improved job satisfaction for team members.

Several examples of this cooperation are available from Kellogg's experience. In one of our teams, one of the youngest members was chosen as a team leader based on his enthusiasm for the program and its possibilities. He has developed into a very good leader and is respected by other members, some of which are his supervisors on various projects. This team leadership role has given this person added poise in presentations outside of the team and confidence in his ability to lead others effectively. Another example of cooperation in team activities may be cited from one of our teams where the two co-leaders are among the most senior and most junior members of their departmental group.

This team has functioned smoothly and without leadership conflicts which are sometimes caused by job competition.

Engineering Involvement Teams also allow the members to receive recognition directly from their department or division managers as they participate in team presentations. Presentations are an important part of team activities because communications skills are learned. Engineers often have to make technical presentations to clients in support of sales efforts. Skills acquired through team participation help members to be more effective spokesmen. This is another way that team members grow as a result of their involvement.

Team members find that good organization is the key to successful completion of a task. Organization is at the heart of the process which governs a team's activities. Organization which encourages the team to search for the best answer among many alternatives. Organization which gives the team confidence that the consensus decision reached by all of the members is workable, efficient, and most important, sellable.

Engineering Involvement Teams represent The M. W. Kellogg Company's application of the Quality Circle concept to a professional engineering organization. The steps in the problem solving process which we call "Innovative Problem Analysis", are specifically designed for the professionals who are using them. The focus is on improvements in quality and productivity which are within the control of the team's immediate supervisor.

SPECIAL CONSIDERATIONS

Engineering contractor staffs are made up of a high percentage of engineers. These engineers form an employee group which is unique in many ways, especially compared to the manufacturing environment. The personnel are all salaried employees who are highly educated and many are recognized experts in their field. The company itself is primarily organized to support ongoing projects which tend to be somewhat cyclic with the overall business climate. Also, the main product of an engineering contractor is service and expertise, not a piece of metal or plastic that one can touch or throw or drive.

Engineers tend to be a group who are not trained in techniques which encourage looking for more imaginative solutions to a problem when a workable solution is at hand. Because engineers also tend to be highly motivated, ambitious individuals, they often do not seek the opinions of others. This trait may also come from the fact that engineering seldom develops the "people skills" needed to work smoothly in a group. Engineers tend to be independent people who have to have concrete, logical information on which to base a decision. This bent toward logical, fact oriented decision making is precisely the area which must be balanced with imagination through the Innovative Problem Analysis process for engineers to best develop innovative solutions.

Engineering Involvement Teams work to help engineers overcome the tendency to seize the first solution to a presumed problem and to search for the real underlying issue. Each team is taken through exercises which teach that the consensus decision of the team is better than the average of the individual team members decisions taken apart from the group. Team members are trained in the same techniques used by Quality Circles to encourage creativity. The needed people skills are also developed through open discussion and consensus as discussed previously.

Team training has proven very valuable in molding a group of individual engineers into a team capable of handling complex topics. The members find out the meaning of consensus while dealing with hypothetical problems where team members have no strong, emotional convictions. Individuals go into the exercise with an attitude of "So what, this is only a training exercise.", but they come out knowing that their individual performances, on average, are worse than the performance of the group working as a team. Once the team begins to function as such, it is time for the next step, Innovative Problem Analysis.

INNOVATIVE PROBLEM ANALYSIS

Innovative Problem Analysis (Fig. 1) is our twelve step process which guides the Engineering Involvement Team. This process has proven to guide teams through a thorough analysis, and keep them on track through solution finding and implementation. The process may be divided into five major categories. These are: Fact finding; Problem finding; Idea finding; Solution finding; and Acceptance finding. Throughout the program, the main force behind Engineering Involvement Teams is not lost. That main driving force is better quality and productivity. Teams are encouraged to look for areas where they can best improve these two things.

o FACT FINDING

Fact finding encompasses the first three steps in the process. The team members develop a list of possible issues for discussion. Backup information or facts are then developed which point to real problems in the various areas. Finally, a general area of emphasis is agreed on.

o PROBLEM FINDING

Problem finding begins with the establishment of a specific problem statement. This specific statement must be narrow enough to focus the team's attention and must not hint at an obvious solution. Next, causes of the problem are identified and root or basic causes are highlighted. Also at this point, the interrelationship of several causes is often brought to light. Data is then collected to support the root cause decisions. During the analysis of this data, if other problems are noted which are more basic than the one identified in the problem statement, the process may be recycled and re-started at step 4.

o IDEA FINDING

The analysis of the data collected in the last section of the process leads to ideas for solving the root causes of the problem. This is a point where caution may be swept aside for a time while the team searches for unique, elegant, and innovative ideas.

o SOLUTION FINDING

Ideas brought out in step 8. of the process are now scrutinized for their practicality and operability within the constraints of the team's supervisor's authority. The aim is to erase the highest number of root causes while not expending undue effort chasing rainbows. This section ends with the selection of a solution statement which remidies the problem statement.

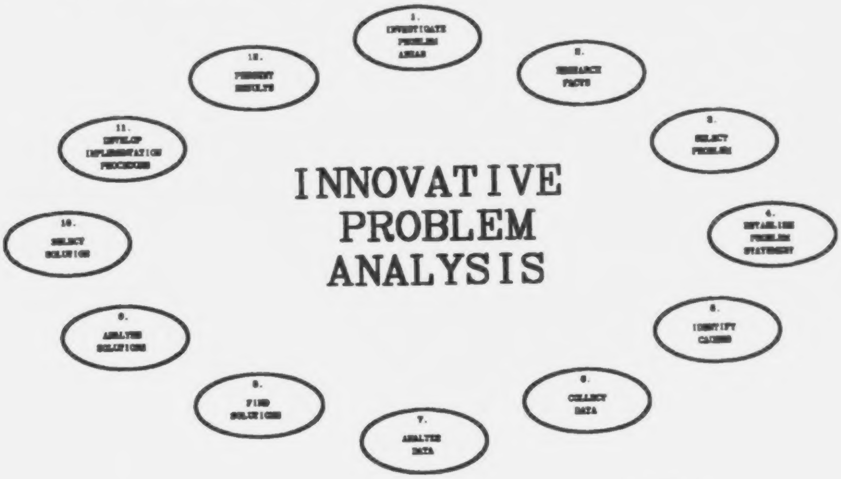

1. INVESTIGATE PROBLEM AREAS
2. RESEARCH FACTS
3. SELECT PROBLEM
4. ESTABLISH PROBLEM STATEMENT
5. IDENTIFY CAUSES
6. COLLECT DATA
7. ANALYZE DATA
8. FIND SOLUTIONS
9. ANALYZE SOLUTIONS
10. SELECT SOLUTION
11. DEVELOP IMPLEMENTATION PROCEDURES
12. PRESENT RESULTS
INNOVATIVE PROBLEM ANALYSIS

FIGURE 1

o ACCEPTANCE FINDING

This last section is perhaps the most important to the team. The value of the solution must be weighed against the mechanism set in motion to implement it. The procedure must be specific so that the effort will not be sidetracked. A schedule is usually included for this purpose also. The presentation to management which ends one cycle with the satisfaction of a job well done, also signals the beginning of a new cycle.

ORGANIZATION

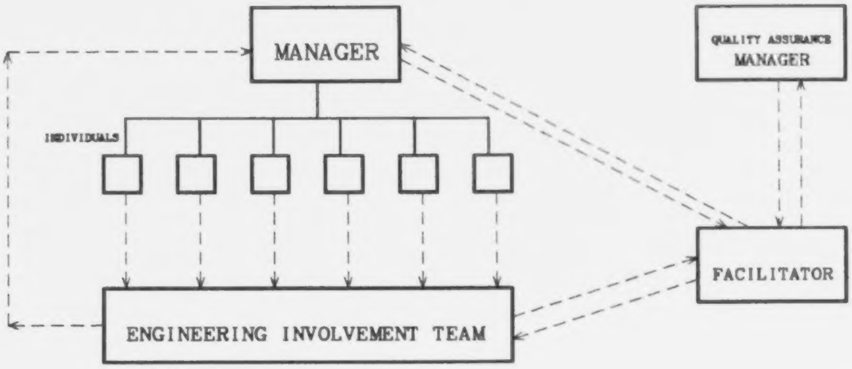
Each Engineering Involvement Team works within the boundary of the team members' immediate department or project. The team is encouraged to bring in outside experts during their search for the best solution to the problem at hand, but existing management ranks are never bypassed. A general diagram of how the Engineering Involvement Team program works is shown in Figure 2. The individual to whom the team members normally report makes the decision on whether or not a team's solution and implementation plan are acceptable. This person may be a department manager, division manager, or a project manager. These managers are kept informed during the time that the team is working not so that management can direct the team's activities, but so that there will be no surprises along the way. In several cases, teams have interviewed managers when sensitive inter-departmental issues were on the agenda.

The teams meet regularly, one hour per week on company time. These meetings have not impacted any job schedule at least partly because the team members are professionals who recognize the need to meet schedules and deadlines while also recognizing the need to put in the extra work required to make their team successful.

Team membership is entirely voluntary, but once a commitment is made members are urged to continue. Prospective team members are given an orientation presentation which defines the Engineering Involvement Team program, the reasons behind it, its history in Kellogg, and the importance of the program to productivity and quality improvement. After this presentation, attendees are asked to complete and return an interest questionnaire which was developed to gauge relative enthusiasm for the program's possibilities. Team members are selected based on the results of the questionnaire and relative responses of the group to which the presentation was given.

Once chosen each team usually chooses its own leader. Then the leaders go through an in-house training program. Leaders receive training so that they may train their individual teams in the Innovative Problem Analysis process as well as the various techniques utilized within each step. These techniques include brain

FIGURE 2.
ORGANIZATION



storming, cause/effect analysis, multivoting, etc.

New facilitators for the program are usually chosen from among the ranks of the existing team leaders, but new facilitators have also been picked based on their response to the interest questionnaire mentioned earlier. Facilitators are given additional training over and above that given to the leaders. Facilitator training includes a review of the process and techniques used in the program as well as training in intervention skills, communication, observation, and listening. Facilitators act as the primary means of communication between the teams, the engineering Quality Assurance Manager, and other facilitators.

Facilitators work with the Engineering Involvement Teams on a part-time basis and are usually assigned to a maximum of two teams. The facilitators meet regularly with the engineering Quality Assurance Manager to share ideas and communicate effective methods utilized by the various teams. Except for the bi-weekly facilitator/Quality Assurance Manager meetings, facilitator duties are carried out in addition to regular job related activities.

RESULTS

Engineering Involvement Teams were originally introduced to three divisions within Kellogg engineering. Team involvement has now grown to include three interdisciplinary teams, one of which has representatives from every engineering discipline. An in-house training manual has been developed for every level of team activity from individual team members through the facilitators. This manual, which also includes a member handbook, has now been used for two leader training classes and one facilitator training class.

Topics which have been addressed by Engineering Involvement Teams are wide ranging. The Process Engineering team known as the "PIT Crew" developed a methods manual which greatly reduces the time required to develop estimates for client proposals. Another team from Process Systems, better known as "QUEST" solved a hardware selection problem which had been under study for several years prior to their involvement. Another example comes from the Electrical Engineering team known as the "Rectifiers". This team tackled the problem of how to best utilize the computer aided design tools available to the division to maximize productivity.

As was stated earlier, the product of The M. W. Kellogg Co. is engineering services. This fact makes it difficult to quantify the savings realized due to the efforts of Engineering Involvement Teams. However, one example which has been cited in a management presentation involved the methods manual developed by the PIT Crew. One of the methods which was uncovered and communicated to the Process Engineering Department reduced the manhours required to complete a yield and utility estimate for a refining process unit by over 80%. What this means in real terms is that for the same expenditure of engineering effort we can now develop proposals for four clients instead of one, or it allows us to be able to put more effort into improving the content of a given proposal. Another example involves the QUEST team. They solved a problem which had not found a solution for several years of sporadic work by individuals. People seemed to always find higher priority work to do just before the task got completed. This may be contrasted to the QUEST team which made the solution to their hardware problem the top priority and maintained their enthusiasm until the job was completed. The team's solution included the publication of a new design procedure which is now in use throughout the division. Once again it was proven that a group of individuals working together can exceed the accomplishments of the sum of the individuals working separately.

SUMMARY

This paper has given a look into the engineering contracting business and examined how one contractor has been using innovative techniques to maintain a competitive edge. A process for solving engineering problems called "Innovative Problem Analysis" has been described. The mechanics of the Engineering Involvement

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Team program have also been illustrated. Within this context, attributes of the program which address the special needs of engineers have been discussed. Finally, examples of the success of the teams has been given. This paper is basically a look back and an update of the Engineering Involvement Team program at Kellogg. The future of Engineering Involvement Teams is being made every day. Enthusiasm for the program has been maintained and the professional quality of the various management presentations has spurred interest from new areas of the company. The program continues to grow as more divisions request teams in their areas. Program growth is still limited by facilitator availability, and training time availability. From the beginning, the plan has been to grow only as resources become available and as enthusiasm grows in new areas. The enthusiasm continues and the program will grow as resources are made available.

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David, along with two other people developed Kellogg's Engineering Involvement Team concept and Kellogg's in-house member, leader, and facilitator training materials. He has led training sessions within Kellogg for team members, leaders, and facilitators.

He is an expert in fluid solids process design and is the author of numerous technical papers. He is also the author of a paper and magazine article on Quality Circles applications in the engineering contracting industry.

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The Nominal Group Technique: Six Steps to More Effective Strategies

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The Nominal Group Technique (NGT), a group decision-making process, is described as an effective alternative to traditional brainstorming. Designed for situations where diverse or conflicting perspectives make agreement difficult or unlikely, the NGT increases participant satisfaction and commitment and improves group productivity and decision quality. This paper discusses how the six-step Nominal Group Technique can be used to develop creative strategies that work, through the structured involvement of diverse stakeholders. It also describes under what conditions the NGT is most appropriately and effectively utilized, how it enhances the strategic planning process, and how it compares to other traditional techniques. Finally, an application of the NGT in the strategy development process of an IAQC chapter is presented.

Description of the Nominal Group Technique

The Nominal Group Technique was developed by Andre Delbecq and Andrew Van de Ven in the late 1960's as a technique to facilitate and enhance citizen participation in the program planning of community agencies. Since then, the NGT has been widely applied in education, industrial, health, social service, and government organizations as a special-purpose, judgmental group decision making technique. It is particularly useful in situations where the nature or solution to a problem is not clear, diverse ideas and perspectives are needed, and where group consensus is the desired outcome.

As a special-purpose group process, the NGT is appropriate for identifying elements of an ambiguous problem situation, identifying elements of a solution program, and establishing priorities. The NGT is a very structured mechanism for idea generation and group consensus seeking, and is most useful when a specific task or question requires a group's ideas and judgment. The NGT can, therefore, be an important component of participative, group-oriented, task-oriented or issue-oriented programs such as Quality Circles.

The Nominal Group Technique is a highly structured brainstorming approach to problem solving. NGT has three primary objectives:

- o To establish a variety of input channels, encouraging a creative environment for generating different perspectives on the problem at hand.
- o To provide an environment conducive to maximum participation of all members of the group.
- o To provide a "mathematical" basis for selecting and ranking input elements.

The Nominal Group Technique has proven to be very effective in that it is easy to learn; applicable to a wide variety of areas and situations; easy to integrate into programs and projects of larger scope; highly satisfying to participants: and quite successful at inspiring a commitment to action, follow-through, and resolution.

The NGT process employs six sequential steps to achieve consensus and commitment. These six steps, and the benefits thereof, will be defined, explored, and demonstrated during the presentation:

1. Individual "silent generation", Delbecq's and Van de Ven's term for the writing of ideas by group members, who are instructed to work quietly and alone as they list their individual ideas in response to a particular task or problem statement.
2. Individual round-robin feedback from group members of all of their ideas, recorded in a succinct form on a flip pad.
3. Group clarification of each recorded idea.
4. Preliminary voting and ranking on priority ideas by having each participant record, on an individual ballot, his or her preference as to the best ideas appearing on the master list; votes are tabulated and posted on the master list.
5. Discussion of the ideas on the master list and the results of the preliminary vote; ideas are reworded, combined, deleted, and added.
6. Final voting by each member to identify the best ideas on the master list; votes are tabulated, posted, and discussed.

How to Execute the NGT[1]

- o Step 1 Silent Generation of Ideas in Writing

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[1] Delbecq, Van de Ven, and Gustafson. Group Techniques for Program Planning, 1975.

Process:
- Present problem statement
- Illustrate level of abstraction and desired scope
- Avoid further clarification
- Ask group to write ideas in brief phrases
- Ask group to work silently and independently
- Sanction disruption of the silent, independent activity

Benefits:
- Provides adequate time for thinking and avoid interruption of others' thinking
- Facilitates hard work by the model of other group members reflecting and writing
- Avoids premature focusing on single ideas
- Eliminates dominance by high-status or aggressive members
- Keeps group problem-centered

o Step 2 Round Robin Recording of Ideas on a Flip Pad

Process:
- Take one idea serially from each member
- Individuals may "pass" when they have no further items but may "re-enter" later
- Members may "hitchhike" and add new ideas
- Record ideas in the words used by group members - do not edit or rephrase
- Keep entire list visible
- Avoid discussion at this time

Benefits:
- Equalizes opportunity to present ideas
- Assists in separating ideas from personalities
- Provides a written record and guide, thus avoiding loss of ideas and encouraging hitchhiking
- Places conflicting ideas comfortably in front of the group
- Forces the group to fully explore the problem

o Step 3 Serial Discussion for Clarification

Process:
- Group members clarify the meanings of items and explain their reasons for agreement or disagreement
- Avoid forcing the member who originally lists an idea to be solely responsible for clarifying it

Benefits
- Avoids having discussion focus unduly on any particular idea or subset of ideas
- Helps eliminate misunderstanding
- Provides opportunity to express the logic behind items
- Allows members to disagree without argumentation

Step 4 Preliminary Vote on Item Importance

Process:
- Ask group to independently select from the entire list a specified number of important items; place them separately on 3 x 5 cards; and rank order them
- Collect and shuffle the cards to retain anonymity
- Tally the vote and record results on flip chart

Benefits:
- Obtaining independent judgments in writing helps eliminate social pressure to conform
- Deriving judgments mathematically by rank-ordering increases accuracy of judgments
- Displaying the array of individual votes clearly highlights areas needing further clarification

Step 5 Discussion of the Preliminary Vote

Process:
- Goal of this step is clarification, not pressure toward artificial consensus
- Keep the discussion brief
- Caution group members to think carefully about any changes they make in their voting

Benefits:
- Provides group members a final opportunity to clarify their positions
- Ensures that "spread" votes really reflect differences in judgment, not unequal information or misunderstanding

Step 6 Final Vote

Process:
- Repeat Step 4
- Reach consensus and closure

Benefits:
- Accurate aggregation of group judgments and error reduction
- Closure to the meeting

An Application of the NGT

In planning its annual activities, the officers of the Central Jersey Chapter of the IAQC traditionally solicit input from the chapter members via surveys, interviews, and informal discussions. While worthwhile, we found that we needed a better way to encourage active participation in the planning process and to assess the overall priorities of the group. Toward this end, during a chapter meeting in which the NGT was presented as an additional technique for facilitators, the following problem statement used to demonstrate the NGT process: "What could the chapter do during the next year to meet your needs?" We broke into small groups of six to eight people, assigned a table leader to each group, and had them follow the NGT methodology in soliciting responses to this question. This enabled the attendees to learn how to apply the technique, while simultaneously providing useful information to the chapter planners.

The groups ranked their ideas in order of importance, from which frequency distributions were also noted. These ideas were then presented the following month, at the next chapter meeting. The NGT was then used to generate additional ideas and to obtain a final ranking. The results were summarized and distributed to all members via the meeting minutes. This information was then used to plan and develop the programs and activities offered during 1986-87.

We found that the results of the NGT approach to gathering information about member needs and interests yielded a much greater number of ideas than had been contributed in previous years, and the priorities of the chapter members were more clearly identified. As a result, we were able to plan a diverse set of programs and activities specifically designed to address the needs expressed by our members.

Comparison with Other Techniques

Brainstorming

This technique promotes a free and uninhibited atmosphere conducive to the generation of creative ideas. The object is to contribute as many ideas as possible. At the end of the brainstorming session, consensus is achieved by majority vote.

Brainstorming in groups produces a greater number of creative ideas than when individuals work alone. Brainstorming groups tend to be especially effective at synthesizing information, evaluating it, and achieving group consensus.

Brainstorming groups are limited, however, in that they tend to inhibit creativity, and thus may produce ideas that are more superficial in nature. Creativity inhibition is the most severe problem for brainstorming groups, and is caused by a number of factors:

- o Pressures on the individual to conform to group expectations; dissenting opinions and new ideas are discouraged, as the group tends to dwell on areas of agreement -- "groupthink".
- o Dominant personalities tend to exert undue influence on the group.
- o Individuals often participate only to the extent to which they feel equally competent with other group members -- self-censorship.
- o Too much group time and effort is devoted to group maintenance, thus decreasing the quality of decisions.
- o Because individual group members seldom have the opportunity to think ideas through independently, ideas tend to be expressed in low-quality generalizations.

The Delphi Technique

Participants in the Delphi process do not meet face-to-face. The technique involves collecting views on a particular issue through an iterative series of written questionnaires, summarizations, and feedback.

The Delphi Technique has been found to be advantageous in that the generation of ideas in isolation, with the opportunity for reflection, produces a high quantity and quality of ideas. The anonymity of respondents provides freedom from group pressure to conform and assures equality of participation opportunity.

On the other hand, the Delphi Technique requires a considerable amount of time and requires that its participants have excellent written communication skills. Communication and interpretation difficulties arise because there is no opportunity for verbal clarification or comment on the feedback report. The Delphi process identifies group priorities, but does not provide an avenue for conflict resolution. It also requires a coordinator to process and reissue the groups' responses.

In general, the Delphi technique is recommended when experts are physically dispersed and desire anonymity. Brainstorming is best for conveying information, changing attitudes, team building, and achieving group consensus.

The Nominal Group Technique is superior at generating large numbers of unique, high-quality ideas, identifying a greater number of problem dimensions, determining priorities, reducing error, and enabling the inclusion of diverse or conflicting viewpoints without sacrificing problem resolution. With knowledge of these alternative techniques, the decision-maker can select the best group process to match a given problem or situation.

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BIOGRAPHICAL INFORMATION

Ms. Wynne Weingarden serves as Assistant Director of Corporate Quality Assurance at the Educational Testing Service in Princeton, New Jersey. Her primary responsibilities include directing the corporate Quality Control program and coordinating Quality Circle and other employee involvement efforts throughout the organization. Ms. Weingarden is the President of the Central Jersey Chapter of the IAQC and has served on the IAQC Program Planning Committee for the 1986 and 1987 Spring Conferences.

Ms. Audre Wenzler is the Director of Human Resource Planning at Coopers & Lybrand in New York City. She has extensive experience in the field of organizational behavior and most recently has focused on such concerns as gauging job satisfaction; executive development; reward systems: and performance management. Ms. Wenzler is a member of the Human Resource Planning Society, the Academy of Management, and The American Society for Training and Development, and has been named to Who's Who in American Women (1986-87), and Who's Who in Professional and Executive Women (1987).

D: Professional Enhancement/ Development

Expanding The Quality Circle Concept To Large Task Issues: The Evolution Of The Facilitator Role To Task Leader.

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This paper describes the evolution of a Quality Circle Program into a Participative Task Leadership Program and its impact on the organization, the leader, the facilitator and group members.

I. Introduction

The foundation of our participative programs at Polaroid is found in an early Personnel Policy statement which developed two basic aims for the Corporation. The first aim is to develop products that are genuinely unique and useful, excellent in quality and return an attractive profit to the Company. The second aim is a worthwhile working life for each member of the Company that draws out each member's best talents and skills.

In 1979, a Quality Circles Program was introduced into the Corporation in one division as a pilot program. This basic concept of quality circles has gone through many changes and enhancements over the past 9 years, but the basic foundation is still in place.

Today, our program is called Small Group Activities which encompasses the Quality Circle Program and Participative Task Leadership Program. Currently, we have 225 small group activities, with additional expansion expected over the next few years.

In our presentation, we will describe our Participative Task Leadership Program which is a customized Quality Circle training program.

II. Task Leadership: An opportunity to expand and rejuvenate your Quality Circle Program

In late 1985, the Corporate SGA Steering Committee sponsored the development of a program to enhance the skills of task leaders. This program, which ran for 6 months, included 40 hours of basic quality circle techniques, followed by 16 biweekly four-hour workshops. The intent of the program is to develop the effectiveness of task leaders by appropriate training in participative task skills through the use of quality circle techniques, action effectiveness, project management, and other participative techniques so that we meet the interests of the students and needs of the business segments while increasing organizational effectiveness.

For the participants, both opportunity and risk are present in the program. The opportunity arises in acquiring task leadership skills and solving difficult organization problems; however, the risks inherent in this program are greater visibility and higher expectation from management that problems will be solved with these new techniques and approaches. However, in our program, the participants exhibited a high level of energy and accomplished all of their assigned tasks.

Inherent in this new program is a shift in the time line for task completion. Whereas the quality circle program usually aims for a 3-month completion cycle, the higher order nature of the problems undertaken in the task leadership program required at least 6 months to fully solve and implement. This recognizes the broad diversity of people required to solve organizational problems and the varying levels of energy they bring.

III. Conflicts and Opportunities

Once the Steering Committee had sanctioned Participative Task Leadership to be an extension of the Small Group Activities program, a change in the charter had to be made to accommodate it. Our charter, like most charters, set forth roles and responsibilities for supervisors, leaders, management, members and facilitators. Task issues were broader in scope and involvement than projects attempted by small group activities teams.

The changes made to the charter are as follows:

- Increased the management role so that they could direct and guide task leadership projects.
- Changed the definition of who could be a group leader.
- Allowed for divisional projects rather than just departmental projects.
- Allowed for recruitment of members to assist the task leader rather than the voluntary membership of small group activities teams.

The Participative Task Leadership Program offered us the following opportunities:

- Reinvolvement of former leaders and facilitators.
- Upgrading and enlarging the role of active facilitators.
- Increasing the visibility and credibility of the Small Group Activities Program.
- Upgrading of skills with more advanced problem-solving and facilitating techniques.
- Working on high return projects with intra- and inter-divisional scope.
- Rejuvenating maturing groups.

IV. The Changes Required In the Steering Committee

The whole concept of the Steering Committee's roles and responsibilities were reviewed in light of the expansion of the Small Group Activities Program into Task Leadership.

The first step for the Steering Committee was to establish the basic goals and objectives of the Task Leadership Program so that they could understand how they had to change and grow.

The basic goal of the Participative Task Leadership Program was defined as follows:

"Enhance the Small Group Activity effort by assisting individuals and organizations to develop additional participative problem solving competence and to assist the solving of organizational problems."

The objectives for the staff of the Task Leadership Training Program were outlined as follows:

- Work with organizations to implement the program.
- Provide training to program participants.
- Provide linking and networking of participative task leaders.
- Provide coaching, additional training if needed, facilitation support, and participant monitoring.

In order to ensure that these goals and objectives were achieved, the Steering Committee did the following:

1. Expanded the membership to include participant sponsors.

2. Adopted changes in the charter that involved them in task leader selection. This made them a partner in the task's ultimate outcome. To further expand upon this point, they agreed that sponsors and participants must jointly establish the scope, goals, objectives and due dates of tasks.

The Steering Committee, through these changes, sanctioned wider and more detailed involvement in the participative process and moved from a committee that encouraged and promoted the concept to a more directed and involved approach.

V. Training

The Task Leadership Training Program is composed of a 40-hour Project Management and Problem Solving Techniques Section and 16 biweekly four-hour Project Workshops covering topics needed by the participants to complete their projects.

The 40-hour training session covered the following topics:

A. Project Management

1. Set goal
2. Set deadline
3. Break into sub-tasks
4. Organize sub-tasks into order
5. Set target dates and benchmarks
6. Assign action plan
7. Monitor

The 16 project workshops were held every other week after the 40-hour training program to assist and coach the participants to successfully complete their projects. Topics covered in these sessions were as follows:

- Managing A Project Participatively
- Project Manager's Role
- Gaining Commitment
- Listening Skills
- Time Management
- Developing Strategies
- Group Processes and Dynamics
- Utilizing Computer Software
- Presentation Skills
- Project Status Reports
- Group Dynamics
- Organizational Influences That Undermine Participation
- Project Planning
- Feedback

In addition, each participant was assigned to a Training Staff Member who would give individual coaching as required.

This Task Leadership Program was more extensive than our Quality Circle Training and required that our training resources be increased substantially to meet the goals of the program.

The basics of the Quality Circle Training were incorporated into Task Leadership but the remainder of the program was customized to meet the needs of the participants. The projects workshops were designed to be dynamic and flexible since they had to meet the needs of the participants. For each of the training sessions, the participants are surveyed to determine, as a group, where are their strong and weak areas. The workshops are then designed around the participants.

VI. Exploring Managements New Pole As A Full Partner In The Task Process

For the first time in our participative process history, the management had a continuing direct involvement role. In the Participative Task Leadership Program, the Sponsoring Manager had the following responsibilities:

- To identify a high priority organizational task to be solved.
- To select a project leader and program participant.
- To support the participant through the 6 months of training and coaching.

To help the Sponsoring Managers, a Task Assessment Worksheet was developed to provide a guide. The main sections of this worksheet are as follows:

- Task Description
- Task Dimensions
- Leader Characteristics Needed or To Be Developed
- Problem/Process Skills Needed
- Initial Action Plan/Contract
- List of Potential Group Members
- Identify limitations, boundaries and constraints of the potential project

B. Problem Solving Techniques

1. Brainstorming
2. Reviewing for clarity
3. Consensus
4. Voting
5. Grid
6. Cause and effect relationships
7. Data collection
8. Verification
9. Cost benefit
10. Force field
11. Action planning
12. Presentations

This worksheet would be translated with the participant, staff member and sponsoring manager into an Initial Action Plan. This action plan became the participants guide and was reviewed and updated on a regular basis to reflect the actual situation and progress of the task. All changes were made in writing and agreed to by the sponsor and the participant.

VII The New Role of Task Leader/Team Members

The task leader's role is fundamentally different than the facilitator role of quality circles. In this new role, the leader is a coach, facilitator and leader who is responsible for an assigned task or project. This does represent higher expectations and opportunities to solve pressing organization problems vis-a-vis a group selected problem. In the meeting formats, however, many of the fundamental quality circle techniques are applied to the larger task issues.

As with many task groups, members are selected and appointed based on their qualifications, background, training, skills and place in the organization and this may preclude voluntary participation. Within this context, members are expected to fully participate, carry out their assignments, research data and report back to the group. This requires greater flexibility, willingness and participation from each member. There also needs to be a higher level of responsiveness to management's demands on the group. This manifests in increased scope of the project, higher payback required, frequent reporting, faster response or shortening of the completion date.

IX Monitoring and Evaluating The Program

Each task is monitored on an ongoing basis by the staff, the participant and the sponsor. The monitoring process was facilitated by the fact that each task had a timetable developed and agreed upon by the participant and sponsor. Deviations from the timetable were easy to detect since the participants meet every other week at a workshop. The staff had a tracking chart for the biweekly status of projects.

At the completion of the projects, the benefits and results were documented for future reference and accumulated for all the projects to assess the overall impact of the program. This was a way to analyze the cost benefit of task leadership.

At the midpoint of each task leadership session, a survey questionnaire is sent to each sponsor and participant to solicit comments and to assess the effectiveness of the training. The results of these questionnaires is reviewed with the participants at one of the workshops and any changes to the remainder of the training is then made and agreed upon.

These monitoring and evaluation techniques mentioned above are short-term assessments.

The long-term assessment of the program will be made by contacting participants at 6-month intervals over the next year after they complete the program to see how effectively they are still using the techniques.

X Task Leadership Projects

During our presentation of Task Leadership at the Conference, we will review three actual projects to give our audience a feeling of the application of the program.

Competitive Edge Career Pathing

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Remaining professionally competitive is a challenge facing all employee involvement professionals. Professional enhancement of skills and personal career development are the keys to improved performance and avoiding "employee involvement burnout". Attendees will learn a process for assessing present career directions and gaining a competitive edge through realistic career pathing.

Remaining professionally competitive is a challenge facing all quality circle and employee involvement professionals. Professional enhancement of skills and personal career development are the keys to improved performance for both individuals and corporations. A process for assessing one's present career status with the intent of gaining a competitive edge through realistic career pathing starts by evaluating one's "employee involvement burnout potential" and determining preliminary needs for professional development.

Dr. Schaffer's presentation includes numerous topics from a workshop designed to train career changers or job hunters in the most effective and efficient job selection methods for finding work in the new American economy. This training program has been used for the past few years to train hundreds of unemployed workers to realistically select a new career or job target. Topics with handouts to be covered in the presentation are:

- How To Avoid "Burnout"
- Competition And The Free Enterprise System
- Selecting An Ideal Employee Involvement Career
- Locating New Opportunities With Your Present Employer
- Assessing Transferable Skills
- Prioritizing And Goal Setting
- Performance Enhancement Through Career Development

Topic: Burnout

Burnout can be defined in terms of being a state (all pervasive), a trait (periodic/situational) and functionally (activity). It can be observed when there is significant loss of motivation, enthusiasm, and energy or when an individual's behavior departs from his or her norm. Researchers have found five damaging stages of job burnout which employee involvement trainers should be aware of while working. Those stages are:

Stage One:	The Honeymoon
Stage Two:	Fuel Shortage
Stage Three:	Chronic Symptoms
Stage Four:	Crisis
Stage Five:	Hitting The Wall

Topic: Competition And Selecting An Ideal Employee Involvement Career

Attendees will review a handout on the new American economy and brainstorm ideas on how to enhance their performance and career potential in quality circles and employee involvement through development of opportunities in their present organizations.

Topic: Assessing Your Transferable Skills Through Prioritizing And Goal Setting

Though there are many of books, research findings, and experienced career counselors available to assist people in a career change or search, many people become victims of a lot of misinformation about how to select a career or job. The key to a successful career change involves hard work and systematic self assessment. Many of the methods use in quality circles can be applied to assessing new career directions.

Topic: Performance Enhancement Through Career Development

Dr. Schaffer will close the presentation by discussing a "career development" model widely used in the private sector. Attendees will receive demonstrations on how to complete important decision making exercises and have an opportunity to ask questions regarding the career evaluation process, self assessment exercises, and career development model application.

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A Creative Approach To Facilitator Development

Donald Swain, Cincinnati Bell Telephone
Bill Black and Linda McPherson, Communications Workers of America

A four-stage model has been developed as a guide for facilitator development at Cincinnati Bell Telephone. The model defines a progressive plan for acquiring the knowledge, skill, and experience needed by a facilitator to perform major job responsibilities. Critical components of the plan include a facilitators circle, a mentoring system, and extensive use of existing Company and community resources.

Introduction

Employee involvement at Cincinnati Bell Telephone was formally started in 1980 in the form of Quality of Work Life. QWL was jointly sponsored by the Company and the Communications Workers of America. The strategy to implement QWL involved a long-range plan to change the culture. We knew that management would have to foster the concept and employees would have to value their contributions in order for QWL to be successful. The plan would require education, new skills and time to change employee perceptions. We also knew that facilitators would be necessary to accomplish the change. What we didn't know was exactly what role the facilitators would play and how to prepare employees to become competent facilitators. Experienced facilitators from other organizations reported that they attended a one-week basic training course to learn circle methods, but learned most of their skills on-the-job through trial and error.

After several years of experience, we now know how a facilitator contributes to the success of a circle, and also what he or she should not do. We also have learned how to provide a structured set of activities that enable a facilitator to acquire these skills in a relatively predictable manner. Although the model is designed to fit our approach to employee involvement, the concept can be readily modified to fit any organization.

Responsibilities

A development plan is not possible without first defining responsibilities. We have defined four major responsibilities that are performed by a facilitator in order to ensure a successful circle and a successful program.

Marketing At Cincinnati Bell, the circle is viewed as the facilitators' customer. Facilitators must be able to convince managers and non-managers of the benefits of volunteering to participate in QWL. They also must be able to get two circles to work on cooperative projects, and to foster collaboration between the circles and company resources.

Networking Most organizations recognize networking as an important responsibility. We have defined networking as establishing links between a circle and its management, between two or more circles, and between a circle and Company resources.

Facilitating meetings This is a major part of the facilitators job. We include monitoring the circles progress toward solving work-related problems (task) and also the progress of members developing as a team (process). Facilitators lead the meetings of all new circles to serve as a model. They are required to gradually turn this role over to the circle members within a 12-month period.

Conducting training Our facilitators conduct structured simulations in problem solving and group dynamics, lecture on basic QWL principles, and conduct workbook exercises. They also teach members how to observe behavior during circle meetings and how to give process feedback.

Stages of Development

At CBT we believe that development is a continuing process. Training courses, experience, and time on the job are all necessary to develop competency. We have identified four stages of development: Orientation, Apprentice, Associate, and Expert.

Orientation This stage is presented from the perspective of a participating employee. The employee is viewed as a customer that must be sold on the benefits of participating. Efforts are made to translate the person's past job and life experiences into the QWL context. The person defines their existing network of resources that has been developed from work and community experiences. They also become a member of the facilitator's circle to experience first-hand the benefits of participating in employee involvement. Formal training during the orientation stage includes a one-day workshop to learn QWL methods and facilitator responsibilities. By the end of the stage the person must be committed to making the QWL process a way of life.

Apprentice During his or her apprenticeship, the person will learn how to perform the job under the mentorship of an experienced facilitator. He or she first will be certified to conduct basic QWL training. The certification process involves attending the workshop, observing the mentor deliver the workshop, and finally delivering the workshop with the guidance of the mentor. They also will learn about the existing QWL network: where the Company has active circles and what kind of projects have been completed. They will attend several different circle meetings as an observer. The mentor will conduct feedback sessions after each meeting to discuss circle activities and to examine similarities and differences of the various circles. At the end of the apprenticeship, the person will be able to facilitate circle meetings without aid and also will feel confident to perform basic facilitator responsibilities.

Associate Initially associates are assigned to facilitate meetings for two or three existing circles. After they are comfortable in this role, they are assigned to a new circle. In the new circle they will be responsible for conducting start-up training. The associate is also responsible for networking between a circle and its management and between two circles. The mentor is still available for help with immediate problems and the associate has the facilitator's circle available for other types of problems. Marketing responsibilities are focused on maintaining member commitment and enthusiasm within the circle. During this stage the associate attends a one-week communications workshop conducted by the Company's management training group. Here they improve presentation skills and learn about small group dynamics.

Expert In this stage the facilitator is able to handle any QWL issues. Experts are involved in most of the marketing activities. They conduct small group meetings to sell management on starting new projects and conduct orientations to recruit volunteers from work groups. Expert facilitators have been able to start many new projects as a result of specialized networking. Expert facilitators conduct training for ther facilitators, work on advanced problem solving methods for circles and deliver presentations at professional meetings.

Individual Plan

We prepare a plan to suit the needs of each facilitator and the situation. Some facilitators are full time, and some are part time. Some are managers, some are union members. Some are trainers, some are engineers, some are mechanics, etc. The structure of the plan is the same, but the events and time frame vary.

A facilitator with a training background already knows how to conduct training sessions but may need to learn problem-solving methods. A facilitator with an engineering background already knows problem solving methods but may need to learn how to deliver a training session. A facilitator with a background as a union steward already knows how to network but may need to learn how to sell QWL to management.

Facilitators are initially involved in QWL as a part-time job. These facilitators spend three to five hours a week in QWL-related work other than structured training. Part time facilitators progress through the stages in 12 to 24 months. Progress varies depending on the current QWL situation and on the needs of the Company. If several circles need facilitators, the process can be accelerated. If the facilitator's regular job demands more attention, the development process can be extended.

Facilitators Circle

The facilitators at CBT function as a circle. We believe that QWL methods are good for us as well as for actual circle members. Facilitators are expected to practice what they preach. They must be able to demonstrate a working knowledge of the methods as well as to teach the circles how to use the methods.

In the circle context, facilitators experience first-hand all the roles necessary for an effective circle: leader, member, facilitator, note taker, time keeper, etc. The circle has identified and solved several problems associated with their jobs of facilitating circles. They have also made a management presentation to the company coordinating committee.

The circle also serves as a forum to discuss QWL goals, marketing strategy, circle needs, development plans and publicity. New training exercises are introduced through the circle and resource persons have attended meetings to discuss new Company policies and programs.

Membership in the circle includes the QWL coordinator, the lead management and union facilitators, and eight to ten part-time facilitators. The circle meets at least once a month for two hours and more often if the situation requires.

Mentoring System

When QWL was first introduced at CBT, a union and a management facilitator were assigned to each new circle to demonstrate to employees that QWL had joint sponsorship. Both facilitators attended the circle meetings. Since both facilitators were new to the job, they frequently met after the meetings to discuss the events and methods. This process now has evolved into a more formal mentoring system. In this system, we still use two facilitators to start a circle. Now, however, one of the facilitators is an expert and the other an apprentice. A new union facilitator is assigned to work with an experienced management facilitator, or a new management facilitator is assigned to work with an experienced union facilitator. They still meet after circle meetings to discuss the process. The experienced facilitator is able to translate events and explain techniques that were used during the meeting. The apprentice is able to gain on the job knowledge without the risk of trial and error.

Resources

Many of our facilitators have attended IAQC training sessions and conferences to aid their development, but most of our resources come from within the Company and the local community.

The most valuable Company resource has been its Management Training group. This group offers workshops and seminars on a regular basis covering knowledge and skills that are directly applicable to facilitator development. Communication Skills, Time Management, and Managing the Problem Solving Process are examples of the most popular workshops. We also have borrowed many training films for use with circles experiencing a specific problem.

We have used technical trainers as a resource to explain work methods to circles. We have also used experts from the Sales staff to assist in preparing our QWL marketing plan and from Employee Communications to assist in writing training and publicity materials. These are just a few examples that were selected to demonstrate the availability of resources. Each company will have a unique set of resources available.

There are several advantages for using existing resources. One is that they are more readily available and can be tailored to meet the needs of the program. Another is that they are free or at least cheaper than going to resources outside the Company. The most important reason is that it has established a link between QWL and existing programs that has been beneficial to both. In the training area, for example, we have been able to recruit managers to attend scheduled training sessions. We also have been asked by many groups to facilitate their meetings and to help in Company community service projects that require our skills. (There is no such thing as a free lunch.)

In the community we have found many resources available to support facilitator development. The most used resources are those offered by local chapters of processional associations. Besides IAQC, there is a chapter of The Administrative Management Society, the American Society for Training and Development, the Cincinnati Personnel Association, etc. Each organization offers meetings and workshops on a regular basis. There are also university-sponsored workshops and seminars in addition to regular courses. Many churches and civic organizations offer programs to the public that cover topics useful for facilitators. Most of these resources have been brought to our attention by our facilitators who are members in the organizations mentioned.

It should be noted that not all facilitators go to all activities. Those who do attend a seminar, workshop or conference bring back useful information or skills that are discussed in the facilitators circle.

Summary

The four-stage approach to facilitator development does not produce instant facilitators, but it does not produce instant failures either. Our circles are not exposed to unskilled facilitators. From the Company's perspective, the plan is predictable and manageable. From the facilitator's perspective, the plan is understandable and comfortable. They will not be thrown to the wolves without knowing the job. The facilitators circle is probably the most important component of the plan. Through the circle the facilitators are able to control part of their own development and have input into the structure of their own jobs. Although we continue to search for the ultimate solution, the model is working for us.

Biographical Information

Donald Swain is the lead management facilitator at Cincinnati Bell Telephone. He is responsible for the development of union and management facilitators as well as facilitating circles.

Bill Black is Vice-President of Local 4400, and Linda McPherson is Vice President of Local 4401, of the Communications Workers of America. They both serve as union facilitators in the QWL process at Cincinnati Bell Telephone and are also both members of the Company QWL Coordinating Committee.

E: Expansion/ Rejuvenation/ Recognition

How To Revive Your Ailing Steering Committee

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An effective, healthy steering committee is likely to be found at the core of all successful quality circles processes. Any process of employee involvement is sure to experience challenges and encounter barriers from time to time. The steering committee will be called on to make tough decisions, to make long-range plans, to anticipate and solve problems. Not all steering committees are up to it. The facilitator who is able to diagnose the problems that the ineffective steering committee is experiencing and to prescribe a successful cure will prove to be invaluable in promoting the health of the entire process.

The model of change that directs the healing process is as follows:

1. Determining a need for change
2. Establish the level of desired performance
3. Implement actions designed to change performance
4. Establish commitment to change

This presentation guides the facilitator through the steps of the model, offering suggestions as to how each of them can be most effectively carried out.

Many facilitators realize that dealing with circles and their members is not the most frustrating part of their job. Though there is no shortage of problems brought up by the circles, facilitators generally have the intellectual and organizational resources needed to address circle problems. It often seems that the difficulties that are the toughest for facilitators to overcome concern the steering committee. This paper will look at some of those difficulties, their causes, and the steps a facilitator can take to overcome them.

No one who has been working with quality circles for any length of time needs to be told of the value of a strong and effective steering committee. Even the best processes are sure to run into challenges over the course of time. The steering committee will need to make tough decisions; it will be called on to make strategic plans, it will be called to predict and provide for the prevention of obstacles that might serve to impede the process or even bring it to a complete standstill. Not all steering committees are up to their responsibilities. It may appear that the steering committee itself is, in fact, the biggest obstacle to the process. An ailing, ineffective steering committee can be the facilitator's biggest challenge.

The "Ailing Steering Committee" Syndrome

No steering committee is perfect - how can you tell if yours needs help or if it is just moving a little slowly at the moment? Take the following quiz, answering all of the questions either "yes" or "no".

1. Does the steering committee meet at least monthly?
2. Does the steering committee cancel less than 20% of its meetings?
3. Does the steering committee stick to a specific agenda for each meeting?
4. When you bring problems before the committee do the members say things like, "Do what you want," or "You tell us what to do."?
5. Does the steering committee seem to take a long time to make decisions?
6. Does the steering committee seem to make decisions very quickly?
7. Is the steering committee reluctant to provide the resources, information, time, materials, finances, etc. that it takes to run the process?
8. Is the steering committee too willing to provide resources? (Do the members seem interested in how the resources they provide are being used?)
9. Are there individuals or sub-groups within the committee that continually dominate its proceedings?

The ideal steering committee gets "yes" for Questions 1,2, and 3 and "no" for Questions 4 through 9. Three "wrong" answers are not bad. If you got four or five "wrong" answers, your steering committee bears watching. If you put down six or more "wrong" answers, your steering committee needs some immediate help. The group shows strong signs of the "Ailing Steering Committee" Syndrome. This syndrome is like malaria in many respects; the program might be able to survive for quite awhile but it will never be robust. The growth of the process will be stunted. The organization will never be able to achieve the benefits that a well-administered process can provide.

The Healthy Steering Committee

The "Ailing Steering Committee" Syndrome is also like malaria in that the best treatment for it is prevention. Most of the problems noted above can be avoided by planning for a healthy steering committee.

The issues that must be addressed when forming a new steering committee are:

1. Mission and Goals
   Why have a quality circles process? What will it do for the organization? What purpose will it serve?
2. Role of the Steering Committee and Its Members
   Why do we need a steering committee? Who should be on it? What purpose do we serve? What is expected of us?
3. Strategies and Tactics
   What does the steering committee do? How should we spend our time? How will we carry out the goals of the process? What other resources and help do we need?

Developing answers to these questions is the most important task facing the group of people who seek to implement a quality circles process in their organization.

Mission and Goals

Everyone on the steering committee must have a clear picture as to the mission of the quality circles process. This picture must be held in common by all committee members. This can only be accomplished through discussion by the group. First, the group must define the mission of the organization as a whole. From this mission statement the organization's goals must be developed. Finally, a clear statement as to the manner in which the quality circles process will promote the goals of the organization must be formulated by the committee. The importance of these activities cannot be overemphasized; the long run viability of the process will depend directly on the steering committee's ability to transmit a clear vision as to the goals of the quality circles process.

Role of the Steering Committee and Its Members

The steering committee must clarify for itself (and for other participants in the process) its own role. It must answer the question, "What can the organization expect of this group?" One of the first issues that must be addressed is that of the steering committee's influence within the organization. It is important that the committee be seen as a powerful body. The make-up of the committee is crucial; members obtained from the top of the organization will be seen as more potent than those drawn from lower ranks. The steering committee will be more able to support and implement the process when it resembles the structure of the rest of the organization. In other words, the same people that lead the organization should lead the quality circles process. The steering committee will also need to define the roles of the other actors in the process as well as their relationships to the committee and to each other.

Strategies and Tactics

When the steering committee decides upon the mission and goals it is, in effect, answering the question, "Where are we going?" In deciding upon the appropriate strategies and tactics, the committee is answering the question, "How will we get there?"

The difference between strategies and tactics is subtle but important. A strategy represents a choice of tools and methods to be used in reaching a goal. Tactics are the ways in which those tools and methods will be used. For instance, the steering committee may decide that a effective strategy would be to make everyone in the organization aware of the benefits of the quality circles process. The tactics it employs might include getting groups of workers from certain departments together for day-long training sessions using various lectures and exercises to demonstrate important points.

What Causes the "Ailing Steering Committee" Syndrome?

It is important to understand the way a healthy process grows for the same reason that a physician needs to know how a healthy body develops. Most readers, however, are probably past the point of needing to know how to build a quality circles process from the ground up. You already have a steering committee and it shows distinct symptoms of illness. Before leaping to a cure, though, you will need to consider the question, "Why does the steering committee act the way that it does?" There are several possible reasons as to the committee's lack of success. Several of them may be unique to your particular committee but there are others that tend to be universal. These can be divided into two broad categories: problems with structure and process, and problems with interpersonal dynamics.

Problems With Structure and Process

This category includes those things that a committee does (or does not do) in order to manage the program effectively. Study this list to see if any of the items below apply to your steering committee.

1. The steering committee has not established a clear mission, nor does it have a concrete set of goals and strategies. The committee that does not have or does not use sound goal setting, decision making, and problem solving procedures will not be successful in the long run. In fact, there is probably no more common reason for failure of quality circles processes. If there is little congruence between the goals of the organization and those of the quality circles process, the committee will find it difficult to make the process an integral part of the business. The steering committee must see the process as important to fulfilling the needs of the organization.
2. The actual make-up of the steering committee deserves attention as a possible source of the Syndrome. The committee may be either too large (more than 15 members) or too small (fewer than five members). More importantly, the committee may include individuals who do not have adequate authority within the organization. There must be clear evidence that support for the quality circles process comes from the very top of the organization. It is important, then, that top managers and labor leaders become members of the steering committee.
3. The steering committee may be suffering from either weak leadership or overly strong, dominating leadership. These conditions result when members are unsure of their role. In some cases, certain members may be inclined to defer decision making to a single individual or a sub-group within the committee. In other cases, none of the members may be willing to act decisively.
4. The steering committee may have inadequate knowledge as to how a quality circles process should be administered. The members may be ignorant of the benefits and costs of the process and how they should be managed. This is simply a case of lack of training.
5. If the organization at large has an authoritarian managerial climate, the committee memmay not be fully in tune with the concepts and philosophy of worker participation. In fact, it is possible that a rigid organization would prevent even a knowledgable steering committee from making significant changes.

Problems With Personal and Interpersonal Dynamics

This category includes problems that arise as a result of the attitudes and behavior of the individual members.

1. It is possible that participation on the steering committee does not fulfill the needs of the individual members. Indeed, membership may be perceived as a barrier to certain political, business, or personal goals of the members. In this case, the members would have a vested interest in the failure of the program.
2. There may be tension or conflict among committee members.

How To Treat Your Ailing Steering Committee

All of this still does not tell us what to do to help cure the already established but ailing steering committee. In other words, what if it is too late to prevent these problems? What do you do if you have problems right now? In that case, it is time to act!

Making the Diagnosis (Gather Data)

First, the facilitator needs to assess the severity of the Syndrome. In other words, the facilitator should define and measure the deficiencies of the process. Answers must be provided to the question, "What do I see within the process that makes me think that the steering committee is ineffective?" In answering this question, it will be important to look at the entire process; look for observable, measurable performance problems on the part of participants at all levels of the process. Some examples would be attendance at quality circle meetings, the number of quality circle meetings held, the attrition of team members, the loss of teams, the growth of the number of teams, numbers of proposals developed by the circles, the length of time spent in the development of the proposals, the attendance at training sessions, the ease or difficulty in obtaining information by the circles, the degree of cooperation received from managers and supervisors, and the amount of harassment experienced by team members.

Presenting the Diagnosis (Give the Data to the Committee)

Your purpose in presenting this information is to persuade the steering to hold a one- or two-day, offsite meeting or a series of long, intensive onsite meetings. This might be difficult to accomplish but little can be done unless the steering committee is willing to commit the needed time and energy. to solving its problems. It is important that the facilitator not back down from the need to get this commitment from the committee. Your chances of success will be greatest if you are able to show the committee members the connection between their own performance and the health of the whole process.

You must be armed with specific information. An emotional or intuitive appeal might work but is riskier than the presentation of firm evidence of the committee's impact on the process. If the committee asks, "What difference does our behavior as a committee make?", you must show it the results of its ineffectiveness. You will find that it is much easier to get the steering committee to take responsibility for the program when you confront it with hard data.

Providing the Cure (Hold the Meeting)

If your steering committee asks you about the format for the meeting, tell the members that they will:

1. Establish a level of desired performance for the process,
2. Develop an action plan to achieve that performance level,
3. Develop a plan for evaluating the process.

During the meeting itself, you will first lead the group in a Force Field Analysis of the quality circles process. A force field analysis is an excellent tool for identifying problems and opportunities. You will find it easy to use.

First, have the committee members brainstorm responses to the question, "What is the ideal quality circles process for us?" Another way to present the question is, "Imagine our quality circles process five years from now. Imagine further that everything about the process is just as we want it to be. Everything is perfect. Everything is ideal. Describe that picture; What is true of the process at that time?"

Encourage the committee members to be as specific as they can in making their descriptions. For instance, it is better to say, "We'll have 50 circles at that point," than it is to say, "We will have added more teams," or "We will have grown as a process." You may have to prompt the members a bit. If so, ask them questions like, "How many teams will we have? How many total participants? What will their proposals look like? What will members' attitudes be? What about the attitudes of non-participants? Supervisors? Middle managers? What impact will the process have on this organization in terms of profitability, morale, safety, and work environment?" As the members respond to these questions, record their answers on flip chart sheets. Post these sheets around the room.

When the brainstorming is done, organize the responses a bit. Try to put them into a priority listing. Drop redundant statements. Look for opportunities to combine statements. Remember, you are striving to develop an organized list of statements that describes the group's vision of the process at some future point.

Next, have the group brainstorm responses to the question, "What strengths does the process now possess that are helping to push it toward this ideal?" Do not be afraid to "prime" the group if it is slow to start. Ask the question, "What are the positive aspects of this process?" Also ask, "What helps the process? What sorts of things promote its objectives?" You may need to list a few yourself in order to get things going. It will be important to focus not on anticipated benefits and results, but on the mechanisms that make the process effective. For instance, "Greater control of quality," is an outcome of the process and is properly listed in the description of the ideal process. "Good training procedures and instructors," or "Labor commitment," are two examples of the type of response for which you are looking.

Finally, brainstorm responses to the question, "What are the present weaknesses of the process?" Remind the committee members to be candid and specific. Do not list benefits that have not yet been realized. For instance, the response, "Has not improved morale," would not be appropriate at this point. Focus, instead, on existing barriers to the benefits in question. Have the committee go over its descriptions of strengths and weaknesses in the same way that it did the description of the "Ideal Process." Combine items, delete redundancies, put the items into priority.

At this point, you will have the committee develop action plans that, when implemented, will serve to increase the strengths and diminish or eliminate the weaknesses. An action plan is a set of step by step instructions that tell what will be done, who will do it and by when, and what resources will be needed. A good action plan is very specific and contains much detail.

If the committee decides that it does not meet frequently enough, an action plan that states, "We will all try to remind each other of steering committee dates," is not a good one. Compare to the plan below:

Weakness/Problem: Steering committee did not meet often enough last year; only five times in twelve months.

Objective: Steering Committee will meet bi-weekly for three months in order to get the process back on its feet again. After that, it will meet on the last Thursday of each month.

Action Plan

What	Who	When
Plan dates for the meetings	Committee	Today
Members take note of the dates	Committee	Today
Send a memo with agenda to each member four days before meeting	Facilitator	Before each meeting
Phone a reminder to each member	Facilitator	"
Evaluate the plan	Committee	Quarterly

Take a look at the last step in the action plan. Every one of the steering committee's plans should include an evaluation step in which the committee assesses its progress toward the stated objectives and takes any necessary corrective action. If the committee has done a good job of identifying problems, stating specific objectives, and developing detailed action plans, it will have no difficulty in evaluating its own effectiveness in making the needed changes. During the evaluation sessions, have the committee look again at the "Ideal State" and compare it to the progress that has been made. Brainstorm and list those problems that still exist and add any new ones that may have arisen. Revise the original action plans and devise new ones as needed.

Reviving the ailing steering committee is not an easy task, as you can see, but there are no shortcuts. There is no "magic pill" that you can give the committee members that will suddenly restore their enthusiasm. The procedure described in this article offers you the best chance of returning your committee to health.

Biographical Information

George P. Bohan is the Director of Training and Development at Mt. Sinai Medical Center in Cleveland, Ohio. He has also been involved with human resource development and employee involvement activities in the coal and steel industries.

"Beyond Burnout - How to Enjoy Quality Circles Again When You've Just About Had Enough!"

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Since the Los Alamos National Laboratory first became interested in quality circles in 1981, we have occasionally experienced the phenomenon of burnout. To combat burnout, four circle rejuvenating activities are described. They are: special recognition, planned recess, the introduction of new techniques for old tasks such as using field trips for getting information or to broaden the perspectives of employees and using a decision hierarchy for problem selection.

First, let's define burnout. Burnout is a change in attitude where the individual no longer finds meaning in what was once a dream. Circle participants, facilitators, leaders and members, began by hoping for better things. We truly cared; we had a desire to help, to make a worthwhile contribution; we had a yearning to create; we were enthusiastic. Through circles, we had been invited by management to be more participative. There are several reasons for management to make this change. First, there is the rationale that people are more receptive (or at least less resistant) to activities when they participate in decisions.[1] Second, participation has been proposed as a partial solution to "motivation" problems.[2] Third, a solution chosen systematically by a group can be better than one proposed by an individual. In General Electric's words, "None of us is as smart as all of us".

But somewhere along the way we became frustrated, disappointed, or just plain tired. Thus -- burnout. Fortunately, the circle process itself has the key to combating this problem. Circles are taught to look squarely at a problem, to analyze it, to find several solutions, and to use their collective wisdom in selecting the best solution. Burnout is a many-faceted problem which would probably require a fishbone diagram that would cover all four walls. Each facet might require a different solution. Here are but four suggestions that might help.

SPECIAL RECOGNITION

Of course, we all know that special recognition from supervisors in the form of congratulations, luncheons, or special gatherings should follow successful completion of a project, whether or not the recommendation is accepted and implemented. Another step could be to videotape the group's project and have a showing of it for families. One circle at Los Alamos worked for several months on a problem and made their management presentation (which incidentally was quickly accepted and implemented). The presentation was videotaped and later the families of the members met at a home, had a potluck dinner, then showed the tape. It was the first time any of the family members had seen their circle member in a working environment.

PLANNED RECESS

Yet, for all the good that the teams may do, they do need a breather, especially after working for a long period on a complex problem. Often it can be energizing for the group to have a short break from circle activities. This can be a time for training or simply for reflection before getting back into the swing of employee involvement work. This will also allow the leaders to evaluate the composition of the circle, plan for rotation of members, or make plans for futher training. A planned recess can strengthen a member's commitment in the long run and keep enthusiasm high. A recess can be used to make the transition to another problem in the case of a circle which is organized as a task force.

FIELD TRIPS

Field trips are one way to generate more interest and enthusiasm for a project as well as to gather needed information. We have made extensive use of this technique when interdepartmental cooperation is essential for the proposal.

Observed benefits are:

1. It gives the group a fresh, new appreciation of one facet of the problem which it could not have obtained by having the resource person come in and talk to the group. For example, one circle was considering either the use of a manual tracking system or using computers. It helped to visit an area in which a successful computerized system had been set up. They examined the computer area and followed the process through all its steps. They were better able to see similarities and differences between tracking manually versus by computer.

2. Interacting with other departments creates a positive image of the circle as a group of people who reach out to others for better understanding.

3. Often a vist will sell the other department on the need to help solve the problem and also sells the concept of employee involvement groups. Time and again, I have observed an improvement in interdepartmental cooperation because a bridge of better communication has been established. The 'them versus us' mentality just vanishes.

4. Sometimes the bridge of communication expands the outlook of the circle. In one instance, a group not only solved its immediate problem with fume hoods but has made extensive contacts with several other departments and are helping to outline a course of plant improvement which will benefit everyone in the building (150+ people). This plan will extend from immediate equipment improvements to a building addition and a proposal for a new building. Previously, each department made its requests independently of the needs of other departments. Now there is a better mutual understanding of needs and desires.

DECISION HIERARCHY

Even though the group members may have taken the standard training and may have many skills, a new way of approaching one of the activites can rejuvenate its thinking. One example is to use the technique of "decision hierarchy" for selection of the solution to a problem rather than using the evaluation matrix. This process calls for the group to identify all the possible solutions and to use a "tree" structure to describe each one. The attributes of the desired solution are weighted and scored such that a better optimum solution may be achieved.

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The first step, which would have been identified earlier, is to clearly state the objective. Members must remind themselves of exactly what they want to change. For example, a group decided they wanted to make handling samples more efficient, with the ultimate outcome of better service to customers and also maintain the best possible radiation shielding.

Second, the desired attributes of the new system should be listed, and, if the list is very long, it may be subdivided into categories.

In the above example there might be two categories:

1. Attributes of a better system, which would improve service to customers.
2. Attributes of the best possible radiation shielding.

If it is determined that not all objectives can be obtained simultaneously (e.g., service to customers would be slowed down by certain more cumbersome shielding), tradeoffs among the objectives must be made.

This is most easily done by a direct preference assessment.[3] The list of attributes (obtained by brainstorming) could be placed in categories according to which objective they apply. Then each could be scored subjectively. With even a short list, this could be an involved process with a circle which has several participants, so it is recommended that each choice be assigned a ranking with the most important attribute being the highest rank. By adding individual scores and multiplying the score by its rank, a profile of the preference of the circle will emerge.

Following is an example of a decision hierarchy tree.

Objective: ______________________________
____

Desired Attributes: Rank (each member gives a rank from 1 to 5 with 5 being the highest. Add all member scores together to get final score)

1. ________________________ ____________
2. ________________________ ____________
3. ________________________ ____________
4. ________________________ ____________
5. ________________________ ____________

The next step is to assign attribute scores to each solution. In assigning attribute scores, each member gives each attribute a score from 0 to 10. Individual member's scores are added to give final total score for each attribute. Next multiply the total attribute score times its rank. Then the total score for the solution is added. Highest scoring solution is the one selected for first choice to present to management.

Solution A: Attribute Score:	Solution B: Attribute Score:	Solution C: Attribute Score:
1. _____	1. _____	1. _____
2. _____	2. _____	2. _____
3. _____	3. _____	3. _____
4. _____	4. _____	4. _____
5. _____	5. _____	5. _____

In this way, it is also possible to identify weaknesses in an otherwise good solution. A discussion of possible tradeoffs could follow with multivoting for the final selection.

CONCLUSION

The problem of circle "burnout" can be combated in much the same way that other problems are dealt with. Each facet must be identified, then a plan made to correct the deficiency. Four such solutions are special recognition for circle achievements, planned recess, field trips, and use of the decision hierarchy to select the solution.

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BIOGRAPHY

Connellee-Clay, Barbara- received her BUS degree from the University of New Mexico in 1976 and her Masters in Business Administration degree from the University of New Mexico in 1981. She has been an active participant in quality circles since 1981 and was instrumental in forming the first circle in the Materials Science and Technology Division at the Laboratory. She is a member of Los Alamos and New Mexico Women in Science, the American Society for Training and Development, and the International Association of Quality Circles. In recognition of her work in quality circles, she received the 1983 Award for Working Women from the Council on Working Women, Region 8, U.S. Department of Labor. In 1985, she also received a special award from the New Mexico Council on Working Women. She is in Who's Who in America and in Who's Who in the World of Women, 1986.

Steering Committees

What's Their Role After Start-Up?

by:
Michael Donovan, Ph.D.

Abstract: *A Steering Committee plays a valuable role in launching an employee involvement effort. But, once the pilot groups are underway the committee often ceases to function. However, managing the expansion process is a complex task that requires continued attention from the steering committee. This paper outlines seven areas where the committee can take initiatives to help expand and institutionalize the employee involvement process.*

Introduction

Organizations all across the country have been implementing employee involvement activities as part of their efforts to improve productivity and quality. Research has indicated that strong management support is critical to the long-term success of these efforts. Most successful efforts utilize a steering committee structure as a vehicle for involving management in the planning and implementation of the employee involvement activities. These committees have served a dual purpose - to plan the implementation, and to ensure management involvement, ownership, and support.

Steering Committee - The Initial Focus

Most steering committees were formed to plan the implementation phase of the employee involvement process. The tasks required to implement an effort are clear. The effort needs to be planned and communicated to employees. A facilitator and initial leaders needs to be selected. Policies and guidelines need to be formulated. Training needs to be provided.

Once these initial tasks are completed and the problem solving teams are underway, the steering committee plays a supportive role by encouraging the pilot effort, reviewing progress, and recognizing team accomplishments.

Steering Committee -The Decline

The steering committee typically plays an active role in planning the implementation of the pilot groups. After that point, however, the role of the committee is not well defined. Meetings become less meaningful and more ceremonial. Typically, committees meet less frequently or disband completely. Further progress is often left to a facilitator or staff function with program responsibilities.

The Challenge

The point at which most steering committees disband or fall into disrepair is a critical point for the evolution of the employee involvement process.

As a change strategy, most organizations launch a small pilot effort. The purpose of the pilot effort is to test the concept of employee involvement in problem solving, demonstrate some positive results, develop the internal resources to train and facilitate the effort, and create greater interest and enthusiasm.

The steering committee plays an invaluable role in planning and nurturing these pilot efforts, ensuring this foundation of success.

But, a successful pilot effort is only the first step in the change strategy. The major challenge still remains - how to expand and institutionalize the employee involvement process within the organization. This is the point at which management involvement, particularly higher level management, is critical. If anything, this is the phase where the steering committee needs to play a more active and strategic role.

What is the Role of the Steering Committee Beyond the Pilot Phase?

What is the role of the steering committee beyond the pilot effort? How can it help guide the expansion and institutionalization of employee involvement?

The purpose of this paper is to help clarify that role by outlining seven specific tasks that steering committees can address during this crucial phase.

1) Cause a Decision to be Made That Affirms the Success of the Pilot Efforts and Signals a Commitment to Expansion

The initial management decision to launch an employee involvement effort and the creation of a steering committee to plan and implement that effort visibly signaled the organization's commitment to proceed. A similar decision, clearly and visibly made, can signal the successful completion of the pilot phase, emphasize the commitment to expand the process, and establish momentum for expansion.

2) Clarify the Long-Range Intent of Employee Involvement Efforts

After the initial pilot efforts, it is often helpful to step back and examine the long-term objectives of the effort. What are we really trying to accomplish? Consider the following Case Example of policy statements produced by the same steering committee five years apart.

CASE EXAMPLE

EARLY STATEMENT OF INTENT

Excerpts from a Company's Initial Policy dated 1979

" Our company has had many avenues through which individual employees could contribute their ideas for improvement such as our suggestion program and area safety committees. Quality Circles will provide yet another avenue through which employees within a work area can voluntarily participate in problem solving meetings."

REVISED STATEMENT OF INTENT

Excerpts from the same Company's Policy dated 1984

" Our long-range goal is to create a management process at every level characterized by a search for constant improvement and meaningful employee involvement.

To achieve that goal will require that each manager and supervisor:

- ensure that his/her unit fully understand their core purpose, their customers, their outputs, and the standards their outputs must meet.
- establish and develop unit commitment to clear improvement goals.
- involve his/her employees in an ongoing problem solving process to identify and remove barriers to the unit's improvement goals.
- provide clear, visible feedback to allow all his/her employees to assess progress.
- recognize and reinforce improvement and involvement within the unit."

Clearly, the intent behind this effort was to create another program for those who chose to use it. Five years later, this same steering committee saw their long-range goal quite differently.

This revised intent is broader in scope and is aimed at establishing a participative management process at every level of the organization. The steering committee saw the need to shift from creating a "program," to producing a culture change that would make employee involvement a way of life.

Once the long-range objectives are clarified, the steering committee can examine the current policies, guidelines, and communications in light of the new objectives.

For example, the steering committee in the case above recognized that a heavy emphasis on the "voluntary" nature of employee involvement activities was inconsistent with its goal to make involvement a "way of life." As a result, they revised their policies and guidelines to reflect a transition from a small, voluntary pilot program to employee problem solving being integrated into every work unit.

3) Conceptualize the Effort as a Process Rather Than a Program

Most improvement efforts are short lived because management loses sight of the strategic nature of long-term improvement and approaches the effort as a "program - an overlay on", rather than an integral part of, the management process.

As a result, programs often start with fanfare, yield some short-run success, but generally fail to produce continuing, significant gains.

To produce lasting impacts, employee involvement needs to be seen as part of an overall improvement process that occurs between every manager and supervisor and their employees.

For example, Monmouth Medical Center does not conceptualize their employee involvement effort as a Quality Circle program.

Instead they visualize their "Commitment to Excellence" effort as a hospital-wide improvement process. This process has six elements of which employee involvement is just one.

CASE EXAMPLE

MONMOUTH MEDICAL CENTER, New Jersey
Excerpts from their Commitment to Excellence booklet

The Commitment to Excellence process has six elements. Each Department is expected to:

- o Have active management involvement in planning and activating the process through a "lead team" (a mini steering committee).
- o Create employee awareness about the future directions of the Hospital, key issues, the need for improvement, and Hospital and Departmental goals.
- o Establish and communicate Departmental measures of productivity and quality of care and set specific improvement goals.
- o Establish, train, and maintain ongoing improvement teams through which employees can address unit-level problems as well as inter-unit issues.
- o Provide recognition of team efforts and encourage attainment of gainsharing goals.
- o Repeat and renew the process

Rather than launching an isolated program, the Hospital launched a process, in each Department, designed to focus, energize, initiate, and reinforce improvement through employee involvement.

4) Shift the Process of Planning the Expansion to Lower Levels

Being involved in the process of planning and implementing the pilot efforts created a great deal of ownership on the part of the steering committee. They are frequently among the organization's best supporters of employee involvement. They have been closest to the process and have a stake in its success. It's "their baby."

Planning the expansion process provides an opportunity to involve middle managers and create the same kind of ownership. This can be accomplished by asking each major department to establish its own steering committee for the purpose of planning, implementing, and supporting the effort within their area. In the case above, Monmouth Medical Center accomplished this through the use of "lead teams" within each department.

The overall steering committee can outline the structure and process through which this planning will be done. Figure 1 is an example of an assignment from an organization's steering committee to each major Department Director. The assignment outlines the scope of the planning process and establishes a discussion and review process.

This process not only ensures that adequate planning is accomplished and overall coordination is achieved, but also develops lower-level ownership of and accountability for the goals, plans, and progress.

5) Focus on Reinforcing the Employee Involvement Process Through the Systems of the Organization

Organizations establish norms and desirable behaviors through various systems such as: the reward system, the goal setting system, the promotion system, the appraisal system, the supervisory training system, etc.

FIGURE 1

SAMPLE ASSIGNMENT

To: All Department Directors

From: Quality Improvement Process - Steering Committee

Subject: Planning Our Expansion Efforts

Last year we launched our pilot employee involvement teams as part of our overall efforts to improve the quality of our products and services. The initial teams were very successful and it is our intention to expand the process into each major Department within the coming year.

Last year we acted as a steering committee to plan the initial effort. We provided overall guidelines, facilitator support, organizational communications and awareness sessions and training. With your help, we targeted the initial pilot areas for the effort.

However, with regards to expansion, you and your managers are in the best position to determine the focus scope and pace of the effort in your area.

Therefore, we would like each of you to create a lead team (mini steering committee) to plan the expansion of the QIP process in your Department. This plan should include, but not be limited to, the following:

- o Scope of the Effort (#New Teams)
- o Location of Teams, Names of Leaders
- o Focus of Improvement Effort Within Dept.
- o Types of Teams (Unit Teams, Task Forces, etc.)
- o How Teams Will be Facilitated (Dept. Facilitator, Coord.)
- o Training Needs (#Facilitators, Leaders, Members to be Trained)
- o Awareness, Orientation Activities
- o How Will Teams be Supported by Mgmt.?
- o How Will Team Efforts be Recognized?

The Corporate Steering Committee would like to review all Departmental plans during the week of November 14th. We will publish a schedule.

Once the Departmental plans have been reviewed and approved, they should be included in each Director's objectives for the coming year. Don (the President) will review this with you in your individual goal setting session with him in early December.

Our role as Corporate Steering Committee in the coming year will be to review, coordinate, and assist you with your implementation plans. In addition, we will be addressing several strategic issues to help us institutionalize the process of involving employees in the process of bringing about improvement.

These systems are powerful leverage points for producing change. They specify, encourage, develop, recognize, and reward desired behavior. Through these systems, organizations communicate what competencies, attitudes, accomplishments, and behaviors it values.

The steering committee is charged with facilitating a behavioral change - getting managers, at every level, to involve their employees in achieving improvement.

To accomplish this, the steering committee needs to examine the existing systems of the organization to ensure that they reinforce the desired behaviors.

The Steering Committee should examine these systems to ensure that they are consistent with and reinforce employee involvement goals. For example:

- Do line managers have specific goals for growing and supporting employee involvement efforts?

- Is progress towards those goals reviewed?

- Are people recognized for supporting employee involvement?

- Are managers at high levels compensated for achievement of employee involvement goals?

- Do organizational awards have criteria relevant to employee involvement?

- Is success in managing improvement through employee involvement a criteria for promotion?

- Is employee involvement skill training woven into ongoing programs (i.e., part of supervisory training vs special event)?

- Is appropriate participation in and support of employee involvement considered explicitly in performance appraisals ?

- Are new employees oriented with respect to participation in employee involvement?

- Do executives stress importance of employee involvement in a variety of situations?

- Does the organization's formal mission statement reflect a value on participation and employee involvement?

Examining these systems can open up new ways of communicating the organization's commitment to the process as well as reinforce those who are moving in the right direction.

Many managers, supervisors, and workers take their cues as to what is important from these systems. Their involvement and commitment depends on the signals the organization provides them. If the signals are that employee involvement is *"just another program"* run by a staff group, then people will concentrate on what the organization really does value.

6) Diffusion of Innovation Through Peer Networks

The steering committee faces the ongoing challenge of creating awareness of employee involvement activities and encouraging new levels of participation.

Meeting that challenge means sharing benefits and results as well as dealing with people's fears, doubts, and skepticisms.

Orientation and awareness sessions are often presented by facilitators. Skeptics see them as selling. When top managers promote the effort, the skeptics see them as pushing. So how do we build enthusiasm for the effort?

A very powerful, but underutilized, source of influence within organizations is peer networks. Peers, particularly respected ones, are very credible sources.

Within most organizations, there are both formal and informal peer networks. All the quality managers get together once a year; so do the general managers, the personnel directors, and the comptrollers. The foremen often meet more frequently. Employees from different departments meet at service award events, etc.

These events provide an opportunity for communicating about employee involvement. Getting a respected comptroller to discuss with his/her peers the impact of a team that reduced receivables by three days can be very helpful in stimulating new interest.

A steering committee should get a listing of these events and develop a plan for exerting influence through these networks.

7) Investigate and Evaluate New Trends

As employee involvement in problem solving grows within an organization, there is increased readiness to widen the scope of participation. Managers welcome the involvement and commitment of employees, and employees are more willing to accept new responsibilities.

The steering committee is in an ideal position to capitalize on this readiness. Their role should be to keep abreast of new trends and leading-edge practices with respect to employee involvement. The committee can investigate, evaluate, and create awareness of these trends. They can bring interested managers together to explore ways to take the next step.

CASE EXAMPLE

One organization gave several awards during the year such as: Foreman of the Year, Engineering Excellence Award, Buyer of the Month, Manager of the Year, etc. Each award was presented in a public setting by a senior executive and reinforced by an article in the company newspaper. Over the years, criteria had been established for each award.

The Steering Committee re-examined the criteria for each award and added appropriate criteria for supporting, participating in, or leading the firm's employee involvement efforts.

The Committee also encouraged every senior executive to stress these achievements during the award presentations where appropriate.

This provided the organization with another opportunity to emphasize its commitment to employee involvement.

For example, Monarch Marking Corporation has had excellent experience with its Quality Circle efforts. The circle program demonstrated the kinds of contributions that could be achieved through greater participation. Both employees and management were open to new ideas to broaden the participation. The steering committee began a study of Self Managing Work Teams. They put together a set of readings for interested managers. They sponsored an in-house, one-day seminar on Self Managing Teams with an outside consultant. They arranged for interested managers to visit other companies who were using the concept.

The result of the effort was the identification of two areas where interest and readiness were high. Pilot projects are being planned and launched in those areas. These areas will likely serve as models within the company for other efforts of this kind just as the pilot circles did a few years earlier.

Summary

Implementing employee involvement means introducing change. People will be moving from old methods, structures, procedures, and ways of relating to new ones. People will be learning new skills and roles. It is difficult for a stable organization to manage the transition using its regular structures. A steering committee, therefore, is an important vehicle for planning the change and managing the transition period.

Such a committee often plays a valuable role in planning and launching the employee involvement process. It also serves as a focal point for coordination and guidance.

But, all too frequently, steering committees cease to function after they have successfully launched the effort.

However, managing the change process from the initial successful pilot efforts to full institutionalization of employee involvement is a complex and challenging task that requires continued attention from the steering committee.

This paper outlines seven areas where initiatives can be taken to help expand and institutionalize the employee involvement process.

About the Author

Michael Donovan,Ph. D., President of PDS, Inc., is considered a pioneer in the Quality Circle movement. He launched Honeywell's circle program in 1974 and managed it's growth until 1980. Since then he has consulted with hundreds of organizations such as; Ford, 3M, Boeing, General Dynamics, the Department of Defense, and the State of Tennessee on their employee involvement efforts.

Dr. Donovan is a frequently speaker on Quality Circles. He has published two books and over 15 articles on employee involvement. He also serves on the Board of Directors of I.A.Q.C.

Manville
"BEST SUPPLIER"
MTB
People Working With People
WATERVILLE 01

Igniting Excitement

A Case Study In Rejuvenation

Daniel F. Hagedorn
MTB/SPC Co-ordinator Manville Sales Corporation/ Toledo, Ohio 43693

Nearly all Quality Circle programs go through peaks and valleys. Early in their third year this fiber glass manufacturer experienced a valley that nearly killed their program. Boasting a high point of eight circles and forty four members the process slid to where only one circle of six members was meeting regularly. This case study outlines the events that lead to the decline and the methods used to identify the program problems. It discusses how the process was restructured and other efforts and results seen over the following year.

Manville Corporation is a diversified manufacturing, mining, and forest products company. Headquartered in Denver, Colorado, the company continues businesses begun over 125 years ago. The New York Stock Exchange-listed company and its operating groups employ about 20,000 persons worldwide and operate more than 100 plants, mines, and sales offices of which about one-third are outside the United States. The Waterville 01 plant is a producer of raw fiber glass strands and unwoven mats for use throughout the reinforcements industry. We employ about 300 people.

Manville is a very decentralized company with each of its locations operating with an unprecedented amount of autonomy. In Waterville, plants 01 and 07 are only half a mile from one another but worlds apart in management styles and employee programs.

The Quality Circle process at plant 01 began like most, with a twinkle in the plant manager's eye. During 1982 a lot of investigating was done. Several outside sources were looked into and by the end of the year a consulting firm had been chosen and we had a Steering Committee in place. By the beginning of 1983 we were in the Quality Circle business.

Making Things Better, MTB, our Quality Circle process, was set up like most, with the Steering Committee to oversee the operation and growth of the program and a full-time co-ordinator working directly with the circles.

(See Chart #1)

1983 was a good year, even with the normal shake out we had four circles that presented six projects. The program showed a savings of $125,000 due to the efforts of these twenty two people. We seemed to progress in a smooth organized manner right into 1984; which became a great year for MTB. Our seven circles presented some seventeen different projects showing savings of over $94,000. These thirty eight people were looking forward to bigger and better things from Quality Circles.

Unfortunately there were a lot of other things happening by the end of 1984. As Manville tried to work through bussiness and financial problems many of our best people were moving to greener pastures. The company started to down-size many areas of their operations. As is usually the case, the employee involvement program was one other first to feel the pinch. We lost our full-time co-ordinator but continued to operate with part-time facilitators, besides management felt that after nearly two years the program should run itself.

ORIGINAL ORGANIZATIONAL CHART
of the
MAKING THINGS BETTER PROGRAM

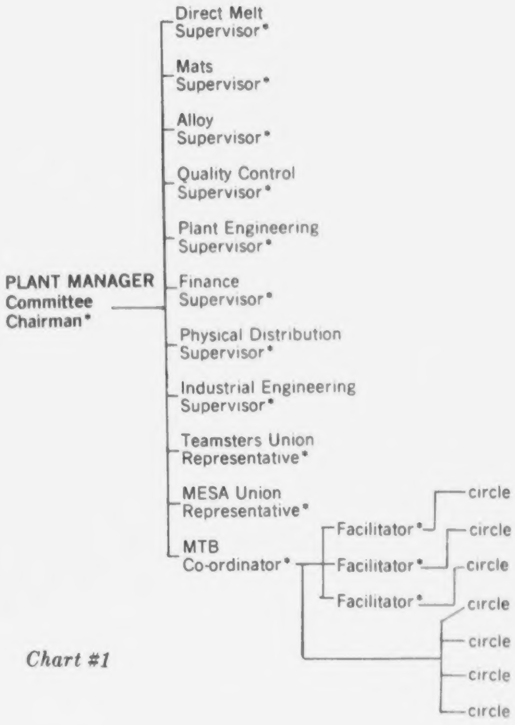
PLANT MANAGER
Committee
Chairman*
Direct Melt Supervisor*
Mats Supervisor*
Alloy Supervisor*
Quality Control Supervisor*
Plant Engineering Supervisor*
Finance Supervisor*
Physical Distribution Supervisor*
Industrial Engineering Supervisor*
Teamsters Union Representative*
MESA Union Representative*
MTB Co-ordinator*
Facilitator*
Facilitator*
Facilitator*
circle
circle
circle
circle
circle
circle
circle

Chart #1

*Demotes Steering Committee members.
Note: Facilitators are non-voting members of the Steering Committee

1985 turned into a disastrous year for MTB. At first the circles kept meeting and making a little head way, but after a few months with part-time facilitators that had never been trained, progress slowed to a crawl. The records show that we had eight circles that presented only five projects with savings of less than $35,000. The forty four members held one hundred and eighty meetings but virtually all of these were before August. In fact after the usual summer slow down only one circle continued to meet on a regular basis. In the last four months of 1985 there were a total of twenty two meetings held.

By November it was obvious to everyone that we were faced with losing the program. It was recommended that we have a pizza lunch for all the **MTB** members. We hoped this would allow for open communications between all the members and the Steering Committee in order to find out just what the problems were and what had to be done to get things going again.

As a result of this luncheon we learned how our members felt about the program and all the problems with it. Because of the loss of a full-time co-ordinator the members saw a lack of leadership and they felt that the facilitators were unable to give enough time to the circles to make up the difference. They felt that the Steering Committee was unresponsive and slow to act on questions and problems the circles took to them. Many of the newer members felt that they hadn't received enough training, if any.

December's Steering Committee meeting was longer than most as we tried to devise a plan to get things going again. The first step was to get some professional training for our facilitators. Two people were sent for training and they were charged with formulating a plan for rejuvenation when they returned.

In order to formulate the most feasible plan we conducted interviews with all the staff and Steering Committee members to see just what the commitment level was. The results of these interviews proved to be as interesting as that of the pizza lunch. All the staff people felt that the program was too important to let die. They also felt that time was the biggest hang up, trying to balance the day to day fires against a program for long term improvement was difficult. They all recognized the lack of leadership but because of the headcount situation they didn't see a way to provide full-time leadership. There was general agreement that the Steering Committee could be doing a better job but they didn't feel free to take care of business, perhaps because the plant manager was the committee chairman.

At this point we recognized what we felt were some basic facts about older quality circle and rejuvenation of employee involvement programs:

All programs are cyclic
You must look beyond start-up
Programs cannot run themselves
Groups of different maturity levels must be handled differently
Training is a never ending process
Every program is judged by what is seen happening

With these ideas in mind we went into January's Steering Committee meeting with proposals we hoped would turn our program around.

It seemed obvious that we had to have a full-time co-ordinator but we still had the headcount problem. We decided to try an hourly co-ordinator, there was a person available and very interested in keeping the program going. This proposal was accepted along with changing the leadership of the Steering Committee from the plant manager to the new co-ordinator and beyond that the plant manager is no longer directly involved in the program but kept well informed of all the program activities. The last major proposal was the creation of our C.O.R.E. Committee.

(See Chart #2)

NEW ORGANIZATIONAL CHART
of the
MAKING THINGS BETTER PROGRAM

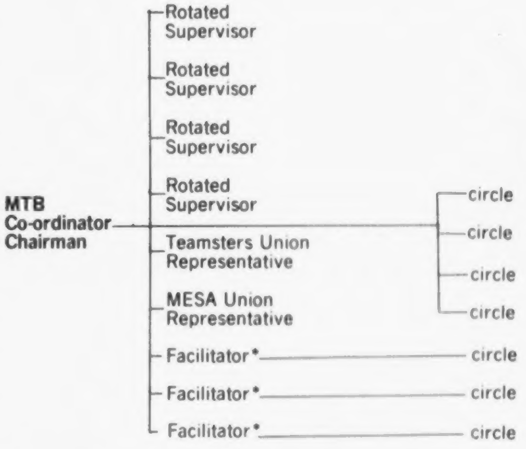

Chart #2

*Facilitators are non-voting Steering Committee members.

The Committee Of Rejuvenation and Excitement is made up of four Steering Committee members and a representative of each of two unions with the co-ordinator acting as chairperson. This group of six people is now responsible for the running of the process. By rotating a C.O.R.E. member each six months the time requirements of the staff members was reduced. We use the rest of the Steering Committee members as a pool to draw future C.O.R.E. members from, they are also invited to all our management presentations.

The smaller group is far more responsive. Meeting scheduling is easier and attendance is better. In the past, presentations could be held up for weeks in scheduling, now we have them as quickly as three days.

This flexibility and enthusiasm has driven the C.O.R.E. on to deal with other problems. We revised our Charter making provisions for moving beyond Quality Circles. The committee is working on continuous training and several tough project implementations as well.

We established resonable goals for 1986 in regard to growth and training and a few general guidelines. Some of the things we've done this year to meet these goals were:

Held a problem solving workshop
Wrote an MTB brochure available in the lunch rooms
Weekly updates to MTB bulletin boards
Wrote a condensed manual for new members
Conducted a logo contest for a program logo
Professional training for two more facilitators

A large part of the success of any employee involvement program will depend on the emphasis placed on public relations. We have tried to put a lot of effort into this area, but the work is never ending. 1986 became a real turnaround year for us. Our seven teams presented ten projects with a savings of $44,000. These fifty-two people held two hundred and thirty meetings working to make things better.

Rejuvenation of a program may be more difficult than starting a new program. The biggest obstacle any organization faces is recognizing they indeed have a problem. Once you get beyond that and if you can honestly evaluate where you are, you can get started igniting excitement!

BIOGRAPHY

Daniel F. Hagedorn is currently the Coordinator for the "Making Things Better" process at Manville's Waterville plant 01. A machinist and union member for fifteen years, he has been actively involved in all phases of the Quality Circle process. Dan is a member and Vice President of the Greater Toledo Area Chapter of the IAQC and serves on their Community Relations Committee.

The Excellence Award for Quality Circles - In the Third Year

Jack B. Henkaline
Manager of Employee Involvement
Sheller-Globe Corporation
Toledo, Ohio

The Excellence Award for Quality Circles was designed to define and encourage the use of essential elements which make successful Quality Circles. Each participating circle establishes a goal and experiences enthusiasm in meeting its goal. The format places characteristics for success into a policy category, and supports the policy with a procedure and an assigned point value which determines its importance.

The program provides Quality Circles and circle members opportunities to excel in their efforts to build quality people, succeed in their performance as a team, and make satisfying contributions to their workplace. The process enhances circle members' well being and establishes standards of excellence consistent with the Quality Circle philosophy as it is known worldwide.

The program is intended to support people-building and the voluntary nature of employee participation through the natural Quality Circle process. It is organized in the belief that there is no limit to the potential of people and groups of people, and that excellence is the constant goal of all persons by their very nature. The program takes into account that people by their nature, desire quality in their lives, choose to participate in quality experiences, live and work in a quality environment, buy and surround themselves with quality products, and seek quality opportunities.

The original Excellence Award for Quality Circles Program was introduced at the 1985 IAQC Conference in Los Angeles, California. More than 100 companies requested additional information about the format to complement their existing Quality Circles process.

THE REASON

Many new techniques have been added to existing Quality Circles to strengthen and add knowledge. The Excellence Award for Quality Circles does not add new techniques. It encourages the continued use of the basic components and methods that make Quality Circles enthusiastic and successful. Before studying the composition of the Excellence Award for Quality Circles, it is essential to understand why the program was designed.

Most Quality Circle programs begin with great enthusiasm, good support, excellent training, and many long term expectations. But, after a year or so, changes begin to occur in essentially every Quality Circle program that exists. Enthusiasm naturally dies down, and probems begin to surface. Circles are now a part of the working process, which may cause some people in the organization to look for program justification. The feelings of the circle member that this is "something new" and "fun to go" is no longer evident.

These intangibles are hard enough on the Quality Circle program, but soon tangible negative factors also begin to occur. The intangible, or tangible, can literally destroy an excellent program. Problems begin to surface which cause a major strain on any Quality Circle program.

TYPES OF CIRCLE PROBLEMS

There are many types of circle problems which may become evident:

- *good administrative and knowledgeable leaders seem to relinquish their role as circle leaders after the circle becomes more mature.*
- *selection of meaningful projects are more difficult to attain. Some projects are so difficult, the circle either does not know how to solve the problem or the approval source cannot be identified.*
- *circle sometimes wants to work on projects outside of work area which causes resentment from others.*
- *problem solving techniques which are taught may be seldom used to solve the project or present the solution to management.*
- *enthusiasm wanes when the problem solving process seems to take too long.*
- *improper followup of project causes problem to resurface and be solved again.*
- *lack of agenda and minutes often result in non-productive meetings.*
- *time period between presentations which exceeds one year causes management to inquire about the progress of the circle.*
- *problem, or substance of the meetings become difficult and attendance drops off or meetings are cancelled.*
- *management is unaware of circle activity and therefore may be unsupportive until presentation time.*
- *non-circle members unaware of circle accomplishments may not acknowledge credit.*
- *in some instances the circle may require training beyond the basic problem techniques.*
- *circles may not know the process needed to assist each other.*
- *the Steering/Advisory Committee may lose their interest in directing the process after the circles are launched.*

EVALUATION

The situations listed above do not necessarily reflect a poor circle program and are generally not characteristic of one circle or one circle program. Frequently, it is found that a few characteristics exist in a mature circle program and these negative elements begin to deteriorate the circle.

For the longevity of any Quality Circle program, it is desirable that all circles be involved in the Excellence Award. To obtain the proper buy-in and ownership of the program, the local management and Steering/Advisory Committee must commit to, and support the process. After the management and the Steering/Advisory Committee have given approval, the administration of the Excellence Award must be the sole responsibility of the Steering/Advisory Committee. The facilitator, who may be part of the committee, has the responsibility of administering the process and becoming a key link between the circles and the committee.

When the Excellence Award for Quality Circles program is properly administered by the Steering/Advisory Committee and the facilitator, and totally supported by management, circles are more willing to participate. Once the Quality Circle is involved, the previous identified characteristics will no longer be a part of your Quality Circle program.

GUIDELINES

The comprehensive set of guidelines that are listed below have been tested corporate-wide by many Quality Circles in many companies. They have proven to be extremely successful. If modification is necessary, the Steering/Advisory Committee must be the only source that has authority to make changes, and the changes must be made prior to promoting the program.

The Excellence Award for Quality Circles is an annual event. The beginning and ending dates are established by the Steering/Advisory Committee.

There is no limit to the amount of points attainable by a circle during the annual time period. For this reason, every circle should begin working toward excellence as early as possible. The points are awarded to circles on an individual basis, and must be consistent for all circles. The program is intended to allow a circle to strive for the maximum number of points achievable. There must not be any comparison, or competition between the participating circles. It is, therefore, desirable that the accumulation of points be kept confidential between the individual circles and the Steering/Advisory Committee until the end of the annual time period.

AWARDS

There are two levels of awards. The first is The Outstanding Circle of Excellence, which is awarded to the circle achieving the most points above 7000. (In the case of a tie, the award will be shared). The next is The Circle of Excellence, which is awarded to any circle achieving 7000 or more points.

Award suggestions for the Circle of Excellence could include a trophy, local recognition, dinner or luncheon for the circle members, or U.S. Savings Bonds. In addition to the same items, the awards for the Outstanding Circle of Excellence could include a visit to another circle at a different location or the circle's attendance at the I.A.Q.C. National Conference. The local management and Steering/Advisory Committee must agree on the rewards prior to announcing the program.

THE DESIGN

The following design illustrates the comprehensive makeup of the Excellence Award for Quality Circles:

SHELLER-GLOBE CORPORATION
EXCELLENCE AWARD FOR QUALITY CIRCLES

Points	Policy	Procedure
100	1. The leaders must have received formal Circle Leader Training given by any facilitator, or a company-approved source	1. The Circle Leaders must have successfully completed twenty-four (24) hours of company-approved Circle Leader Training
100	2. The Circle members must have received formal audio/visual problem-solving training by a Circle Leader or the Facilitator	2. Each member must have formally received ten (10) hours of the Company-approved Quality Circle Basic Problem-Solving training
250	3. The Circle members must have received formal Statistical Process Control training by a Circle Leader, the Facilitator, or a Company-approved source	3. Each member must have formally received Company-approved Statistical Process Control training. The advanced training is defined to be attributes and variables control charts, scatter diagrams, and other statistical techniques beyond those listed in item 4 below

Points	*Policy*	*Procedure*
500	*4. The Circle must understand and demonstrate all of the basic Problem-Solving techniques*	*4. Brainstorming, Cause and Effect Diagrams I, Cause and Effect Diagrams II, Pareto Diagrams, Histograms, Check Sheets, and Graphs must be presented to the Steering/Advisory Committee for evaluation through a Management Presentation or a special meeting. The Steering/Advisory Committee must reach consensus that the Circle fully understands each technique*
500	*5. The Circle must use four of the basic Problem-Solving techniques in each management presentation*	*5. The Circle members must successfully demonstrate their capability of properly using four (4) basic Problem-Solving techniques in each of their management presentations. The Steering/Advisory Committee must reach consensus that the presentation demonstrated the Circle's knowledge of the techniques*
50	*6. Ninety percent (90%) of the scheduled Circle meetings must have actually occurred*	*6. Regularly scheduled Circle meetings must be held except for the following reasons:* *A. The plant or location is not in operation on the day of regular scheduled meeting* *B. There are less than 2/3 members present for the scheduled meeting and the Circle members agree to cancel the meeting* *C. Approved cancellation of the meeting is given by the Steering/Advisory Committee*
50	*7. Ninety percent (90%) member attendance per meeting must have actually occurred*	*7. Members must be in attendance except for the following reasons:* *A. The member is not present in the plant or location during the scheduled meeting time* *B. The member is present in the plant or location but cannot attend the scheduled meeting due to an acceptable reason. The reason must be accepted by a consensus from the Steering/Advisory Committee*
200	*8. Minutes must be recorded each week during the Circle meeting*	*8. Minutes are recorded on a Company-approved Activity Report for each meeting and filed under the Circle name. They must be initialed and dated by the Facilitator or the Steering/Advisory Committee Chairman prior to the next scheduled meeting*
500	*9. An Agenda must be prepared for each meeting*	*9. An Agenda must be prepared prior to, and used in, each meeting. A copy of the Agenda must be filed with the Activity Report for each meeting. The Agenda must be initialed and dated by the Facilitator, or the Chairman of the Steering/Advisory Committee prior to the next scheduled meeting*
**500*	*10. The Circle must make at least two (2) separate and distinct Management Presentations per year*	*10. Both Management Presentations must be recorded and filed under the Circle name by the Company Facilitator.*
	11. Projects: *Circle presentations eligible for the award of points must come from the following project categories. An additional bonus of five hundred (500) points will be awarded for each of the projects below in which Statistical Process Control techniques are utilized as described in Item Number 3*	

Points	*Policy*	*Procedure*
1000	***A. A Management Presentation to show an improvement in the quality of the environment or employee relationships and cooperation*	*A. The Steering/Advisory Committee and the Circle Department Head must reach consensus that the Circle successfully improved the location environment or employee relationship, (and properly used S.P.C., if applicable)*
1000	***B. A Management Presentation which improves safety in their work area*	*B. The Steering/Advisory Committee and the Circle Department Head must reach consensus that the Circle successfully improved safety, (and properly used S.P.C., if applicable)*
1000	***C A Management Presentation to improve the process, or process of work (how the work is done), in their work area*	*C. The Steering/Advisory Committee and the Circle Department Head must reach consensus that the Circle successfully improved productivity, (and properly used S.P.C., if applicable)*
500	***D. A Management Presentation for improving housekeeping in their work area*	*D. The Steering/Advisory Committee and the Circle Department Head must reach consensus that the Circle successfully improved housekeeping, (and properly used S.P.C., if applicable)*
1000	***E A Management Presentation which improves the quality of a product within the plant*	*E. The Steering/Advisory Committee and the Circle Department Head must unanimously agree that the Circle successfully improved the quality of a product, (and properly used S.P.C., if applicable)*

**Awarded one time only for completion of two (2) presentations.*

***Each time this component is achieved, the designated points will be awarded to the circle.*

250	*12. The Circle must receive additional new training during the year that will enhance the quality and capabilities of Quality Circle members*	*12. Additional new training must be approved by the Steering/Advisory Committee prior to being received by the Circle*
100	*13. The Circle must publicize their activities and accomplishments each month*	*13. The Circle is responsible to publicize their activities and accomplishments each month in the media of their choice. The Circle must provide the Steering/Advisory Committee evidence of their monthly publication*
500	*14. The Circle must maintain an open communication with the appropriate members of management who work in and support the work area in which the Circle is formed*	*14. The Managers in the area the Circle is from must agree that the Circle maintains open communications*
300	*15. Each project selected by the Circle must fall within their work area*	*15. The project selected by the Circle must be within the department or work area in which the Circle works. In the event Circle Members come from various areas, a common and familiar project must be selected*
500	*16. The Circle must provide assistance to another Circle in a mutual effort to solve a problem*	*16. The Steering/Advisory Committee must reach consensus that the problem was solved by mutual cooperation between circles*
400	*17. The Circle must provide a plan to track the results, and confirm the success, for each project they have implemented*	*17. The Steering/Advisory Committee must have confirmation of the projects implemented*
200	*18. Evidence supporting the achievement of points must be available for inspection at the time of submission for the Circle of Excellence Award*	*18. Evidence of Circle achievements must be available in an easy to read summary worksheet provided by the Steering/Advisory Committee*

CONCLUSIONS

The Excellence Award for Quality Circles was not designed or intended for every Quality Circle program. Mature circles have experienced the greatest benefit because they tend to lose the important elements that initially made them successful. New Quality Circles have benefitted from the program after completing their basic problem solving training.

The design can be modified for any Quality Circle program. The components that do not pertain can be removed or replaced. If a component has a low point value and it is an important factor, the points can be increased to meet the need.

The Excellence Award for Quality Circles design has a very successful history. To make it successful in any Quality Circle program, management must give commitment and support. The Steering/Advisory Committee and their facilitator must administer the process, and it must be totally voluntary for the circles.

BIOGRAPHY

Jack B. Henkaline is the Manager of Employee Involvement for the Sheller-Globe Corporation in Toledo, Ohio.

Jack has been with Sheller-Globe for the past seventeen (17) years. During this time, he has served as Quality Control Manager, Quality Circle Facilitator, and Training Director. His present responsibilities include organizing and managing existing and future Quality Circles, and other types of employee involvement programs for forty (40) facilities within Sheller-Globe.

Jack's experience in employee involvement includes teaching Quality Circles at the Indiana/ Purdue University Fort Wayne campus, and consulting Quality Circle programs in the United States, Mexico, Canada, and Great Britian. Jack has presented speeches on employee involvement to many top level executives throughout the country. He has presented before associations such as the Society of Manufacturing Engineers, the Detroit Metro Chapter of the International Association of Quality Circles, the Greater Toledo Chapter of the International Association of Quality Circles, and the 1985 National Conference of the International Association of Quality Circles in Los Angeles, California.

How To Avoid Quality Circle Failures and Make Employee Involvement A Way of Life

Sud Ingle
President, Quality Circles Services, Fond du Lac, WI 54935

Today in many organizations, Quality Circles is becoming an old hat. Once again management is looking for another panacea to eliminate existing problems. This reflects the B.O.H.I.C.A. Syndrome. However, this attitude is causing a number of problems in managing Quality Circles effectively. The presenter, using his past experience, will suggest many ways to avoid Quality Circle failures. He will elaborate on how to incorporate Employee Involvement Process in the organization to achieve the goal of high quality standards and keep the Employee Involvement Process going. The presenter will: 1. discuss 20 reasons for Q.C. failures, 2. suggest remedies, 3. present case studies, 4. offer tips on how to make Employee Involvement a way of life.

Research shows that Quality Circles Process was practiced in the U.S.A. during the 1920's and 30's informally. Labor-Management teams were in existence after World War I and II. However, Japan showed the world their effective use of teamwork and employee participation. Once again, American Management took an interest in employee involvement in the 1970's. For a decade, phenomenal growth of Quality Circles was clearly visible. During the past few years, the trend seems to be leading towards a search for new gimmicks to improve Quality and Productivity. Because of this, Quality Circles are losing their effectiveness, and at times have vanished completely.

Jumping Jack Philosophy vs. Building Block Philosophy

We live in a fast moving society and we expect quick results and quick satisfaction. Organizations are no exception. Management in their strive for quick solutions, jump from one program to the other. In other words jumping jack philosophy is practiced.

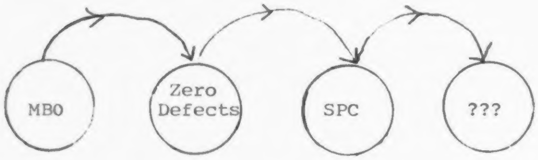

Figure 1

Based on my visits to many countries, I have found that the companies that are using the building block philosophy have a better chance of survival. In this philosophy, instead of replacing one type of program with another, organizations keep the good elements of every program, build on that base and add on new programs. This philosophy keeps management as well as employees involved on an 'on-going' basis.

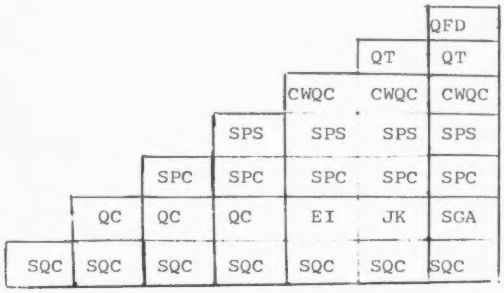

Figure 2

Reasons for Quality Circle Failures

The following is a list of some factors that contribute to Quality Circle failures:

1. Poor communication. All levels of management must understand the basic philosophy and procedures of Quality Circles.

2. Closed policy. Management at all levels must be involved in Quality Circle policy development to ensure its understanding and support.

3. No training. Circles cannot be implementing successfully without member training in problem solving.

4. No follow-up on projects. The Circle recommendations to management should be put into practice instead of being put on the shelf.

5. Poor middle management support. Education of this group is esential lest the Quality Circle concept be regarded as a threat

to their authority.

6. "Lip service" from management. Taking time to get full commitment from all levels of management is a sure road to success.

7. No union involvement. Cooperation with and involvement of the union from the outset is a must. Lack of such support will impair program success.

8. No objectives for program. Clear-cut, meaningful objectives or goals for the program, are essential for a successful program.

9. "Not-for-me" attitude. Individual commitment of each employee and willingness for active participation should back up the program.

10. No publicity. First successes should be broadcast to the total organization.

11. No recognition. Accomplishment in the circles should be recognized. Praise, awards, publicity, etc., are motivators to keep circles alive and thriving.

12. Poor understanding of philosophy. The Quality Circle program benefits the total organization and is applicable to all employees. It is not a program of value only to the quality control department.

13. "Not invented here". The fact that the Quality Circle concept was invented in Japan does not mean that it is not applicable here. Actually, it's use is universal--it can work anywhere.

14. Too much expectation from management. Quality Circles are not a wonder drug. Actually, they can help to save only some 20% of an organization's problems.

15. An over-expanded program. Establishing too many Circles too fast is another sure road to diaster. An organization can "absorb" and support a limited number of Circles at the outset.

16. Problems with other programs. A "bad history" with other management programs can rub off on the Quality Circle effort. Such failures were due, of course, to lack of uderstanding and support, poor implementation, etc., not due to weakness of those programs.

17. Failure to maintain initial enthusiasm. Hard work, not "magic", is the only key to keeping Circles flourishing.

18. Changes in management. New, disinterested, uninformed top level leadership may also cause the program to wither.

Suggested Remedies to Avoid Quality Circle Failures

It is a diffuclt task to maintain and expand Quality Circle activities in an organization after a few years of steady growth. Keeping enthusiasm and interest in the Quality Circle Process involves hard work and patience. It is always easy to just give up. However, there are remedies to get the Quality Circles back on the right track. Some of the remedies are:

1. Establish effective feedback to top management.

2. Establish 'on-going' training for Leaders and Members.

3. Learn new Statistical Techniques.

4. Learn new Non-Statistical Techniques.

5. Integrate various Programs.

6. Establish Management improvement Teams.

7. Don't overlook Gainsharing.

8. Understand C.W.Q.C. and Q-PEC Philosophy.

9. Realization of 'on-going' improvement and Employee Involvement.

10. Customer Satisfaction

11. Take a look at Worldwide Quality and Productivity improvement.

12. Establish Goals and work at these from Top to Bottom.

13. Practice the Employee Involvement Process under a new name/title.

Making Employee Involvement A Way Of Life

Management needs to realize that Quality Circle/Employee Involvement Process is one of esstential ingredients in the Quality Improvement Process. It is a part and parcel of the total Process and not the whole Process. However, it is just the beginning. Quality Circles alone are not going to survive for any length of time. It must be integrated into the total management process. Quality Circles have made a definite impact on American management style and hopefully this movement can be kept active producing fruitful results. What is needed is innovative ways to keep employees involved in problem solving not only for the company, but also for the society. In other words, the scope of problem solving process should be expanded beyond the present horizon.

Future of Quality Circles in the U.S.A.

At the present time, the future of the Quality Circles Process seems questionable due to uncertain management support and understanding of the importance of this people-building philosophy. However, I am confident that if the suggested remedies for overcoming Quality Circles failures are implemented in an organization, the future will be brighter.

What we need is to create a win-win situation in an organization which can only happen through Top Down Commitment and Bottom Up Involvement. These two ways in an improvement process must join together to achieve a common qoal of Quality and Productivity Improvement.

Today's Management has four choices for survival:

1. Make Improvements through Q-PEC (Quality, Productivity, Efficiency, Cost) and DO IT NOW!
2. Wait, wait and go slowly when you start losing Market Share.
3. Do nothing! (You will be out of business soon.)
4. Start Learning a New Language (Japanese, German, or Arabic).

I would like to mention that in 1983, I met Dr. K. Ishikava, a well-known Japanese expert, at the A.S.Q.C. Conference. During the conference, one of the participants asked "What is the future of Q.C. in the Wester World?". Dr. Ishikava reply implied that Quality Circles will survive for only the next ten years. I am sure that we can prove Dr. Ishikava's prediction is wrong. If we can put man on the moon, we certainly can realize the significance of Employee Involvement. Remember the old saying:

"There is No Limit to What We
Can Do Together!!"

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BIOGRAPHY

Mr. Sud Ingle is the President of Quality Circles Services, Inc., a training firm based in Wisconsin. He has conducted more than 500 courses and trained more than 5,000 management personnel from various organizations all over the world. He is widely recognized as a pioneer in the Quality Circles movement in the U.S.A. He is one of the co-founders of I.A.Q.C. Mr. Ingle is author of three books, "In Search of Perfection", "Quality Circle Master Guide", and 'Quality Circles in Service Industries". He is also an editor of Q.C. Trends, a quarterly journal.

Anatomy Of A Successful Employee Involvement Process

Larry Greca
E.I. Facilitator/Ford Motor Company - UAW Local 849/Ypsilanti Plant
Bob Kinsey
E.I. Facilitator/Ford Motor Company - UAW Local 849/Ypsilanti Plant
Sue Sharp
E.I. Facilitator/Ford Motor Company - UAW Local 849/Ypsilanti Plant
Roy Wilson
E. I. Facilitator/Ford Motor Company- UAW Local 849/Ypsilanti Plant

Ford Motor Company, Ypsilanti Plant and UAW Local 849 will show you the Anatomy of a Successful Employee Involvement process from its inception to the present. We will share with you unique methods, rewarding experiences and thoughts for the future continued successes in the Employee Involvement Process.

The purpose of this presentation is to show the Anatomy of a Successful Employee Involvement Process through its expansion, rejuvenation and rewards.

Logo, Plant and Products - We plan to show a video of the Ypsilanti Ford Plant and UAW Local 849 Employee Involvement Logo and explain its origin.

- The video will also include shots of our plant and our product lines. Product lines include the following: Distributors, Horns, Ignition Coils, Bumper Shocks, Starters, Strut Shock Absorbers, and Clutch for the air-conditioning unit.

Union/Management - Unity - In addition to that, the video will also entail/include:

- A short presentation will be given by the Employee Involvement Co-Chairmen of our Joint Steering Committee, Jack Karr (Plant Chairman) and Bob Bertsch (Plant Manufacturing Operations Manager).
- This video will conclude with a review of a Joint Steering Committee meeting.

History of our Employee Involvement Process - The overall History of the Employee Involvement Process began with it being agreed to in 1976 by Ford Motor Company and the International UAW Ford Department as part of the National Negotiations.

- The Ypsilanti Ford Plant and UAW Local 849 were selected as one of the Pilot plants to implement what was then known as Quality Circles in 1979.
- A consultant was hired to provide research and expertise in the Quality Circle Process and train the Quality Circles Salaried Facilitator and the Joint Steering Committee. As a result of this training, the Joint Steering Committee developed and implemented what is known as our Policies, Practices and Procedures.
- At this point in our Quality Circles Process, it was mandatory for all salaried supervisors to assume the role of leader for the circle. At that particular time it was and still is voluntary for all hourly employees.
- In January, 1980, five (5) circles were selected and formulated to implement the Quality Circles Process (total 40 employees).
  - #2 Horn - 9 employees
  - #3 Horn - 10 employees
  - #2 A/C Coil - 7 employees
  - #2 A/C Pulley Final - 8 employees
  - #2 A/C Pulley Machining - 6 employees

Circles Participation/Organization

- Approximately six (6) months after the first five circles were stabilized, an additional five (5) circles were targeted by the Joint Steering Committee for consideration.
- This process continued until it grew into seventeen (17) stabilized circles when an additional salaried facilitator was added. As a result of expansion in the Quality Circles process, a UAW (Local 849) Quality Circles Facilitator was added by the Joint Steering Committee. (42 circles)

As we continued to grow, we reached sixty-three (63) Quality Circles and another UAW (Local 849) Quality Circles Facilitator was added, resulting in two (2) salaried facilitators and two (2) hourly facilitators.

- As the circles matured, a decision was made by the Joint Steering Committee to have the circles elect an Assistant Leader and Recorder. The Leaders and Assistant Leaders then and still do receive on going training in the Quality Circles Process.
- At this time, the Quality Circles were meeting on an overtime basis. (Before or after their shift) when the Joint Steering Committee recommended that the circles meet within work hours (during the shift) this increased and enhanced participation greatly.

Employee Involvement Process vs Program

- Process - A continuing development involving many changes, a particular method of doing something with all the steps involved. A process has a definite beginning but never goes away. It must remain flexible as conditions change.
- Program - A plan or procedure. An event that has a definite beginning and an end.
- In 1984 the Ypsilanti Plant - UAW Local 849 had a Process/Policy change when we no longer called the circles Quality Circles but rather Employee Involvement, so that the Problem Solving Work Groups would/could work on more than just Quality issues. These issues are: environment, work area, and layout of equipment in their own area but no issues covered by the UAW contract.

- When the Employee Involvement Teams are working on their problem they use the 8 steps in problem solving methods/techniques. There may be times when additional assistance is needed, the teams then invite resource personnel to their Employee Involvement Team meeting or make an appointment to see them to have them share their expertise, i.e. engrg, maintenance, warranty, SPC, members of management and other Employee Involvement teams. This results in success and generates a total working relationship between the teams and their resource personnel.

Unique things that make our Employee Involvement Process Successful - One of the things that makes Employee Involvement unique at the Ford-Ypsilanti UAW Local 849 Plant is that the following meetings have been established to review, discuss and improve the continued success of the Employee Involvement Process:

1. Joint Steering Committee Meetings - The Joint Steering Committee meets faithfully once a month to review agenda items and any other related matters concerning/regarding the E. I. Process.

   The Joint Steering Committee:
      Plant Manager - Co-Chair of JSC
      Plant Chairman - Co-Chair of JSC
      Industrial Relations Manager
      President, UAW Local 849
      Controller

      Bargaining Committee
      Plant Engineering Manager
      Manufacturing Engineering Manager
      Area Managers
      Quality and Manufacturing Services Manager
      Facilitators

2. Area Manager/Superintendent Meetings - The Area Manager/Superintendents/Facilitators meet weekly to discuss the Employee Involvement Summary Sheets submitted by their respective teams.

3. Superintendent/Leader Meetings - The Superintendent/Leaders/Facilitators meet once a week to review and update as to where their teams are in the eight Step Problem Solving Process in relationship to their agenda items.

4. Facilitators Meeting - The facilitators meet weekly and as needed to keep each other apprised of any Employee Involvement concerns and to establish the agenda for the Employee Involvement Co-Chairs/Facilitator Meeting and the Joint Steering Committee Meeting. This meeting also includes the help and encouragement of one another.

5. Co-Chairs (Plant Manager & Plant Chairperson) Facilitators Meeting - The Co-Chairs (Plant Manager & Plant Chairperson) Facilitator meeting is held weekly, its purpose is to discuss possible Joint Steering Committee Agenda items and to receive assignments that would further enhance the Employee Involvement Process.

6. Area Facilitation - The plant is divided into 3 separate manufacturing areas and the service departments. Each facilitator is assigned to a respective area and rotates every 4 months. This new and innovative concept was introduced to the facilitators by the Employee Involvement Co-Chairs and approved by the Joint Steering Committee. This concept provides greater continuity which greatly impacted team awareness and a working knowledge of the products for the facilitators.

7. Team Interaction - The purpose for team interaction is to communicate with each other any problems and recommended solutions between the shifts, across departments, as suppliers and customers. Teams also interact with outside vendors and other resource personnel. This interaction is not only one hour a week at their team meetings but also continues on an on going basis.

8. Supplier/Customer Visitation/Poor Quality Supplier Meetings - Our process incorporates having outside suppliers come in to address team concerns. The proposed outcome of this meeting is to reach an agreement in writing on how the problem can/will be resolved. Our teams and other resource personnel also visit our customers and suppliers to ensure a Quality Product and customer satisfaction. Our customers are King/Queen. In addition to the above, our Employee Involvement Process allows the Employee Involvement Facilitators to attend the supplier meetings monthly to express the teams concerns on the vendors defective products. If these problems can not be resolved on a timely basis, then the teams recommend that the suppliers contract be discontinued.

Thoughts for the Future Continued Successes in the Employee Involvement Process

- By the continued commitment/support from the Local 849 U.A.W. leadership who has helped us to lead our very successful Employee Involvement Process with the understanding that this Process is indeed a way of life and a way of doing business.

- Leadership that will continue to stimulate the Process with new and refreshing ideas and offer guidance when necessary.

- The U.A.W. Local 849 membership, will continue to enter upon/adopt the ideology of the Employee Involvement concept with those who know that E.I. must continue to become a way of life and a way of doing business as each live up to their side of the commitment, who helps to shoulder the responsibility for making sure the process works for their own satisfaction, job security and work environment thru their participation and efforts.

- Continue to improve communication with all employees by **Living** the Mission, Values and Guiding Principles.

  Mission - Ford Motor Company is worldwide leader in automotive and automotive related products and services as well as in newer industries such as aerospace, communications and financial services. Our mission is to improve continually our products and services to meet our customers' needs, allowing us to prosper as a business and to provide a reasonable return for our stockholders, the owners of our business.

Values - How we accomplish our mission is as important as the mission itself. Fundamental to success for the Company are these basic values:

- People - Our people are the source of our strength. They provide our corporate intelligence and determine our reputation and vitality. Involvement and teamwork are our core human values.
- Products - Our products are the end result of our efforts and they should be the best in serving customers worldwide. As our products are viewed, so are we viewed.
- Profits - Profits are the ultimate measure of how efficiently we provide customers with the best products for their needs. Profits are required to survive and grow.

Guiding Principles

- Quality comes first - to achieve customer satisfaction, the quality of our products and services must be our number one priority.
- Customers are the focus of everything we do - our work must be done with our customers in mind, providing better products and services than our competition.
- Continuous improvement is essential to our success - we must strive for excellence in everything we do: in our products, in their safety and value and in our services, our human relations, our competitiveness, and our profitability
- Employee Involvement is our way of life - we are a team. We must treat each other with trust and respect.
- Dealers and suppliers are our partners - the Company must maintain mutually beneficial relationships with dealers, suppliers and our other business associates.
- Integrity is never compromised - the conduct of our Company worldwide must be pursued in a manner that is socially responsible and commands respect for its integrity and for its positive contributions to society. Our doors are open to men and women alike without regard to ethnic origin or personal beliefs.

Present Status

- We now have been seven years in the Employee Involvement Process.
- We have grown from five (5) Pilot Teams to 88 maturing Employee Involvement Teams.
- At least 78% of our employees attend an EI meeting at least once each month.
- We, the UAW - Ford Employee Involvement facilitators thank you for attending our presentation of Anatomy of a Successful Employee Involvement Process. We now would like to open it up for a Question and Answer Period.

BIOGRAPHICAL INFORMATION

Larry J. Greca has been with the Electrical and Electronics Division of the Ford Motor Company since 1964. In the past twenty-three (23) years, Larry has received a wide variety of experience which includes: Quality Control Inspector, Manufacturing Supervisor, and Employee Involvement Team Leader. Since June of 1984, Larry has been an Employee Involvement Facilitator and is currently responsible for 30 teams. His past experience as part of the hourly work force and his ability to work with all aspects of the manufacturing business has enriched his contributions to the 88 Employee Involvement Teams and the Ypsilanti Ford facility.

Bob Kinsey, now retired, was one of the Employee Involvement Facilitators for Ford Motor Company in Ypsilanti, Michigan. His six (6) years of Quality Circle experience has enabled him to effectively train leaders and circle members with the problem solving techniques used, such as "brainstorming, data gathering, pareto analysis, and cause and effect analysis." Bob brings to his current efforts a remarkable mix of career experiences. He has worked seven (7) years with the hourly work force and seventeen (17) years as a manufacturing supervisor. This background gives him equal comfort working with both hourly and salaried employees. He has played a key role in the implementation and development process at the Ford Motor Company.

Sue Sharp has been an Employee Involvement Facilitator since 1983 and is responsible for twenty-five (25) teams. Sue has been a member of U.A.W. Local 849/Ford Motor Company for fourteen (14) years, and has held offices in that Local prior to being selected U.A.W. hourly facilitator by the Joint Steering Committee. She is also a member of the local I.A.Q.C.

Roy Wilson is employed with the Ypsilanti Ford Motor Company and also a U.A.W. member for twenty-seven (27) years. Roy was selected by the Joint Steering Committee (U.A.W./Ford Motor Company) to serve as an U.A.W. hourly facilitator because of his past working relationships with his peers and the company. Roy served as a U.A.W. Committeeman for 14 years prior to his appointment as an E.I. Facilitator, and has served in this capacity for 6 years. Roy is presently responsible for thirty-three (33) teams.

Gain Sharing - The Next Essential Step for Quality Circles

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Abstract: Gain sharing plans provide a uniform, clear system for sharing the financial results of improvements in quality and productivity with all employees. Gain sharing helps optimize the results of quality circles or any other employee involvement process. There is ample, growing evidence that managers who do not objectively think through and incorporate gain sharing into the management system of their companies are not doing all that can and must be done to insure the survival of their companies. Much of the data below is based on Smith Associates work with companies in turnaround situations, new business development, and productivity improvement. Discussed are: reasons why gain sharing plans are such effective stimulators of quality productivity, why they can help prevent circle burnout, suitability to most industries and companies, union or non-union, where they work well and do not work well, how to think through a gain sharing formula for your company, and why gain sharing is a win/win situation for customers, employees, company, and stock holders.

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WHY GAIN SHARING? The evidence grows...in the experience of many companies in many different kinds of industries some form of gain sharing plan is an essential next step for quality circles or any other form of employee / management involvement. In terms of industrial survival, any company, profitable or unprofitable, that is confronted by growing international competition and does not carefully evaluate and implement gain sharing is simply not doing all that can and should be done to insure quality production, job security, improved wages and salaries, and a reasonable return for stockholders.

Quality circles have long since proved their mettle, but without gain sharing plans the real potential of circles will remain out of reach. Gain sharing plans produce better results and are substantially different in philosophy and administration from most incentive plans currently in vogue, such as profit sharing, individual group incentives, individual piecework, and variations. Gain sharing is not new to U.S. industries. After a slow start, they are receiving growing attention as a compensation system that bases financial reward on quality improvements in productivity. They focus on teamwork and interdependence. The plans teach a fundamental lesson to employees: no company can compete and exist for long, and there is no such thing as job security, unless wage and salary improvements are earned by productivity improvements; only customers make jobs and pay wages....not the company or union.

Gain sharing is not intended to be a system for bringing normal wages and salaries up to competitive market wages; rather it rewards employees for better than average performance. Because gain sharing plans improve employee understanding of the competitive facts of life, they stimulate more realism and understanding in the wage negotiation process.

What follows is a general description of the common elements found in a wide range of plans and companies with whom Smith Associates has worked over the years. In evaluating a plan for your company, keep in mind that the elements described below may or may not be appropriate for your situation. However, it is important to think through these elements carefully and with an open mind...then frame your own plan.

HOW GAIN SHARING PLANS ARE CONSTRUCTED: Gain sharing plans provide a system for participating employees to share the dollars earned from improvements in productivity. Productivity improvements are expected from white as well as blue collar employees. Changes in productivity are measured by a formula that is published and communicated to all employees. The formula is based on company experience, not some theoretical industry average. To be effective, gain sharing should include all employees, salary and hourly, union and non-union; however, depending on circumstances, some employees may be left out of the plan.

GAIN SHARING IS NOT PROFIT SHARING: Gain sharing is not a synonym for profit sharing. Both plans can work successfully depending upon company environment. Profit sharing plans in general are based on a formula which allocates a percentage of pre-tax earnings. But they frequently lack the motivational impact of gain sharing. Typically the average employee does not know how the profit sharing formula is calculated or how he/she as an individual can directly influence the results. Profit sharing formulas frequently are more rigid in structure and may not adjust easily to unexpected changes in the market place. Because they lack flexibility they have to be carefully and conservatively structured so as not to accidentally "give the house away." This legitimate concern produces an excessive number of safeguards which may make it difficult for the plan to pay off, thereby negating its incentive value.

This discussion does not underestimate the value of profit sharing plans which in some companies work exceedingly well as motivators and reward systems. The discussion emphasizes that gain sharing plans are different in some basic areas and stimulate productivity in ways that profit sharing plans generally do not.

Below are listed key characteristics of well-thought-through gain sharing plans.

FLEXIBLE: They can be adapted to a wide range of product lines and manufacturing environments such as job shops, high volume manufacturing, process industries, service industries.

EMPLOYEE CONTROL: Plans are based on a formula over which employees have major elements of control (wage and fringe costs, material use, quality, efficiency). This contrasts to profit sharing plans where, too often, employees do not have the same feeling of control.

SIMPLE FORMULA: A variety of formulas are currently in use by companies in a wide range of industries. Many formulas are derivatives of the Scanlon formula which is a ratio of total labor costs to sales. Others are based on value added, or units of production.

THE RIGHT FORMULA: There is no one "best" formula; the key is to select a formula that meets the needs of a particular company, group of employees and industry. Where possible, the formula should be based on a minimum of five years experience. (New companies, new start-up plants, and turnaround situations present unique circumstances which require special consideration.) Be sure the formula fits the operational needs of the company and is not just a carbon copy of some other company's successful formula. Test the formula against operating income forecasts and best and worst case scenarios to avoid unpleasant surprises. Depending upon what makes sense for your company, the formula can be based on sales dollars, value added, cost per unit produced, tons or pounds.

ANNUAL REVIEW AND CHANGE: Built into the plan and repeatedly communicated to all employees is the understanding that the plan will be reviewed at least once a year and the formula changed if economic conditions change, or situations arise that require adjustments in the formula. Circumstances that may call for reevaluating and considering changes in the formula are: changes in competitive conditions, new equipment which improves labor efficiency, changes in product mix calling for substantial changes in labor content, and any other changes in the business that alter the original intent and make the plan unfair to participants (the employees or the company).

Changes in labor contract wages may or may not be cause for changes in the ratio. Each company must determine the fair and reasonable course of action. If wage increases can be passed along in the price of the product (market permitting) then the ratio need not be changed. If wage increases alter the market competitive situation, the ratio may have to be altered. All changes in the ratio must be explained to employees.

A VOTE AND LETTER OF AGREEMENT: To start a plan, meetings are held with all employees to explain in detail how the proposed plan will work. If there is a union, union leadership is kept fully informed, and their cooperation is sought. In employee meetings, a letter of agreement is presented for discussion and amendment by employees. The letter should be a straightforward, simple explanation of what the plan is, who participates, when, how, and the basis for calculating the ratio. Two additional facts are stressed: one, the plan will be reviewed annually and changed if economic circumstances warrant; and two, any time employees so vote, or management decides, the plan can be dropped.

At the conclusion of these informative meetings, employees frequently vote on the plan. A substantial majority should vote for the plan before it is put into effect. Negative votes are rare, but when they occur, the reasons should be ascertained and steps taken to alleviate the problems. Once this is done, another vote can be held. The vote is important psychologically because it establishes the plan as "our plan" and not just another management gimmick.

UNION PARTICIPATION: Gain sharing plans are found in union and non-union plants alike. In most situations the plan is for all employees and, therefore, frequently is not part of the bargaining process. However, in some companies, the gain sharing formula is part of the union contract. In all situations, the plan is described in a letter of agreement. In general, unions are more willing to accept gain sharing plans than they are profit sharing plans, for several reasons. One, because most gain sharing plans are derivatives of the work of Joe Scanlon, who was a senior official of the United Steel Workers, they have initial credibility with employees and union officers. Two, gain sharing formulas are easier to understand and from the union point of view less subject to management manipulation than profit sharing plans.

PAY ONLY FOR IMPROVEMENT: Overall productivity must improve or no bonus is paid.

COMPETITIVE FACTS OF LIFE: Gain sharing plans can be superb teachers of basic economic facts. Only customers pay wages and benefits, not the company and not the union. Increases in wages and salaries can only come out of improvements in productivity, if a company is to stay alive in competitive markets.

Understanding of these essential facts and their significance to individual employees is reinforced each month when the bonus formula is calculated. If a productivity bonus is earned employees are told precisely what happened that month to produce payment. If no bonus is earned, employees are told exactly why there is no bonus, and what has to happen to earn bonuses in the future. Although the bonus formula is a group formula, the spotlight and responsibility for results is placed squarely on each individual, to think about and carry out his/her job to the best of his/her ability. In the words of the spiritual: "There's no hiding place down here."

QUALITY CIRCLES IMPROVE THE EFFECTIVENESS OF GAIN SHARING: Some companies have gain sharing plans but do not have quality circles or a similar process for involving all employees in problem identification and problem solving. In the experience of Smith Associates with turnaround situations and productivity improvement efforts, the absence of circles or the equivalent is a serious omission that significantly lowers the opportunity for overall productivity improvement. Studies indicate that gain sharing plans alone do not produce the overall results which are possible when gain sharing is combined with circles. Particularly in downturns, circles focus employee thought and effort on critical areas and many companies report that the effect of downturns on job security and profitability is less severe.

WHITE COLLAR PRODUCTIVITY: Too frequently management thinks productivity problems are blue collar problems. Blue collar productivity is obviously important, but in the future, real gains in U.S. productivity must come from white collar forces. Gain sharing and employee involvement teams focus on productivity lags wherever they are.

ROOM FOR OTHER BONUS AND COMPENSATION PLANS: Frequently, gain sharing takes the place of other bonus systems. However, gain sharing can exist side by side with other compensation plans without duplicating payment and pyramiding costs. For example, there is no conflict with sales compensation or executive bonus agreements. In these cases, earned bonuses are paid in the normal fashion but these payments are then deducted from the employee's earnings from gain sharing. These situations can be worked out with little difficulty.

WHY GAIN SHARING WORKS: There are some simple reasons why gain sharing plans improve productivity, particularly when combined with circles. Employees at all levels develop a feeling of participation and control over their jobs. When productivity improves the rewards are immediate; bonuses when earned are paid monthly. Employees begin to appreciate that their jobs are important and necessary (because if they are not, gain sharing works to eliminate unnecessary jobs). The message itself is simple and clear: if employees improve performance over prior years, everyone benefits...customers, employees and stockholders. Even in periods where no bonus is earned, gain sharing continues to stimulate productivity because the gain sharing process continuously highlights where problems lie and what has to happen to earn bonuses.

CHANGES THAT AFFECT BONUS PAYMENTS AND THE COMPANY: Depending upon the elements included in the formula used to calculate the productivity ratio, changes in the following factors will affect bonuses, company profitability and return on investment.

Changes	Affect Bonus	Affect Company
Sales	Yes	Yes
Payroll	Yes	Yes
Material	Yes	Inventory
Tooling	Yes	Investment
Maintenance	Yes	Mach.Avail
On time delivery	No	Customer Service
Inventory turns	No	Investment
Quality	Labor Material	Customers Inventory

Managers are quick to see the impact of gain sharing on production efficiencies but they should not overlook the significant impact on investment dollars and balance sheet items.

LIMITS TO GAIN SHARING: Gain sharing plans can produce measurable improvements in productivity, employee earnings, and profitability in virtually all companies. However, turnaround situations and new plant startups require special planning before committing to a formula.

CONCLUSION: To compete, to build a financially strong company, with secure jobs with opportunity to earn good wages and salaries, gain sharing coupled with employee involvement is no longer "a good thing to have"...it is an essential corner stone of company management systems.

Financial Incentive for Quality Circle Members

James E. Waldron
Quality Circle Facilitator/Tractech Division of Dyneer Corporation/Warren, Michigan 48090

Sharing the dollar savings resulting from quality circle projects equally between the circle members and the company, works for Tractech. This sharing policy has produced a number of benefits beyond the dollars saved. It has lead to a heightened interest in, and skill at, shop/staff teamwork which has helped Tractech to become a more productive company. Throughout a three-year effort, its hourly, salary and supervisory employees have developed a vehicle for cost reduction that had not been tapped before. The program is not without problems, and requires ongoing support, maintenance and reinforcement by staff and management to continue to be successful.

Tractech Division of Dyneer Corporation is a small manufacturer of proprietary traction differentials used in off-road vehicles such as farm tractors, construction machines and heavy trucks. Our main plant in Warren, Michigan, performs a variety of heavy machining, heat treatment and assembly. The work force is unionized by the Teamsters. We have about 60-80 hourly employees and the usual salaried staff to manage our business and to support this plant and another plant in Europe.

HOW QUALITY CIRCLES EVOLVED

Quality circles were introduced to Tractech in 1980 with the formation of a company-appointed steering committee, a Facilitator from the office staff who was trained at the Quality Circle Institute, and a pilot circle composed of hourly workers with a supervisor as circle leader. This was a traditional textbook circle program. Management was advised of the program plans and of the support that was required from management and the salaried staff. Recognition of the quality circle effort and of the circle members' contributions was made an important aspect. Upon completion of training, members received a nice sports jacket with a company emblem and a quality circle emblem that was designed from member ideas, presented at an assembly of all employees called for that purpose.

However, because of the adverse relationship between labor and management that existed at that time, this first effort was doomed to failure, and fail it did. Six weeks into training, the company fired a popular floor supervisor and the hourly workers retaliated by quitting the program. The company then put the program on hold while we negotiated a new labor contract.

The program was re-instituted in October 1982 with a new name, the Small Group Program. The President selected as Facilitator an hourly employee who had shown a special interest in the program. He was trained at Quality Circle Institute.

We asked for volunteers among the hourly employees and formed five new small groups. We conducted our own leader/assistant leader training using the Quality Circle Institute course, training hourly employees who volunteered. We then put on member training in each small group using the member course.

The new Steering Committee was composed of three members of management including the Vice President of Finance, two small group members elected by the membership, and the Facilitator.

One of the high level management members is the program Advisor, whom the President appointed to assure the program runs smoothly and receives the priority it requires from management and the staff activities that must support it. The Advisor operates through the Facilitator and becomes involved with management when priority problems arise.

We had the usual experiences of starting up a quality circle program with some modest successes and some problems. It took us a couple of years to learn how to understand and support the quality circle idea of teamwork within the Small Groups and cooperation with first-line supervision, middle management, and the staff people in Engineering, Quality, Accounting, and so forth. Our typical projects were small improvements in quality, operations, or housekeeping.

About this time the President and his staff began taking a look at their management styles and at employee involvement as a whole in order to promote teamwork among Tractech's employees.

This was a time when everyone began to realize that we had to live with change and learn how to make changes through teamwork in order to stay competitive. The managers and staff began to see that the hourly workers often had good ideas for both product and process improvements. However, the President believed the company was not aggressive enough in using this resource. He decided to challenge the Small Groups to "think big" and concentrate on major cost reduction ideas.

He got our attention when he offered to award us one-half of the annualized savings our projects would produce.

He charged all his department heads to give priority to supporting the Small Groups as they asked for guidance, help in gathering data, or trying out an idea.

Management has encouraged all hourly and non-supervisory salaried employees to participate by joining or forming Small Groups. The groups are challenged to search for ideas to reduce costs. They pick their own projects, subject to some guidelines. We have found that clear-cut rules are necessary. A small group procedure was written, and has been expanded and amended several times to cover points that were missed in the original program.

PROJECT REQUESTS

In order to receive permission to work on a selected project, the Small Group must provide the Steering Committee with an outline of the problem that they would like to work on.

This is accomplished by filling out a "Project Request Form". On this form is listed the problem that the group would like to work on, the solution (if known) and the expected benefits.

Upon receipt of this form the Facilitator checks if another group has already asked permission to work on this problem. If not, then he contacts the department head in the project area to see if there is an existing company program to solve the problem the group has chosen to work on.

If no one else is working on this project and the Steering Committee determines that the proposed project is within the scope of the Small Group Program, the group is given permission to work on the selected problem.

If a group needs help from another department, such as Engineering or Accounting, the group leader will fill out a "Help Request Form." This form lists the group name, project name and help requested. The Facilitator then takes this form to the department head involved and coordinates the help needed.

In the event the group needs to run a long term test or gather some information, they first discuss it with the Facilitator who then directs the reouest to the Steering Committee. After committee approval they will notify the Liaison Engineer and the Inspection/ Manufacturing/Department outlining the goal of the test and asking them to develop the criteria necessary.

After the Engineering and Quality Departments have determined the method that the group should use to gather their data, the Statistical Process Control Department might be directed to provide the needed charts or graphs. All data gathered would become part of the group's Management Presentation.

MANAGEMENT PRESENTATIONS

The Small Group prepares a presentation which the group members make personally to senior management, the Steering Committee and all other interested supervisors, in the assembly area. The group selects the desired method of presentation such as hardware samples, charts, photos, sketches, slides, a demonstration at the job site, etc., and at a minimum provides a written report to include its recommendations. They are encouraged to give credit to the people or departments that aided them with their project. The members answer questions, and the Steering Committee in particular takes notes for use in considering action on the proposal.

The group, in making a recommendation in its management presentation, is expected to estimate the value of the recommendation. This may be done by referring to the recent past with and without the recommendation, or by making assumptions about the immediate future similarly. The purpose is to provide sufficient justification for management to decide whether to accept and implement the recommendation.

ACCEPTANCE

The Steering Committee is responsible to respond with management's acceptance or rejection of the small group's recommendation. Each presentation is a special case, and the managers responsible for the area involved generally determine management's response. The Advisor and the Facilitator expedite this action, with a goal of responding within one week after the presentation and providing the company's time and events plan for implementing accepted proposals within one more week.

IMPLEMENTATION

Once management has accepted a small group recommendation, it still remains a management responsibility to implement the recommendations, in such a way that the theoretical value or savings are realized in the company's financial statements. Actual costs have to be reduced, if cost reduction is the objective of the project. In other words, management has to find a way to convert an idea for reducing machining cycle time, for instance, into an actual reduction in the machine's hourly cost of operation that is observable in the company's financial statement as a reduction in cost of goods sold or expenses. Theoretical savings do not count!

Our biggest problem has been aligning the small groups' expectations on timing with the company's other priorities and ability to implement our projects. The key to dealing with this is for management to remain accessible to listen to "gripes" when they exist, and to find mutually agreeable solutions, so that the groups and the company always win equally ... never one-sided!

CASH AWARDS

Once implemented, management then is responsible to determine a basis for estimating or measuring the recommendation's actual value, in terms of savings that are to be shared with the small group. Management, and in particular the Vice President of Finance, have the duty to determine or concur with the basis for any award calculation, and to collect new data or historical data if necessary to support the calculation. This data and calculation may be different from that developed by the small group in its management presentation. The important consideration is that it be seen by all concerned as the fairest method of identifying the savings and sharing the savings equally.

Management makes the determination of the amount of awards, which is based on one-half of the eligible savings for the next twelve months.

To be eligible for an award the recommendation must provide a rate of return at least as good, or better than the return required for Corporate investment. A minimum return rate of 75% is the current Corporate guideline for acceptable investments. Should that change, the formula percentage will be changed accordingly. Therefore, the amount of savings eligible for the award calculation is the annual savings less 75% of the investment required. As examples:

	A	B
investment required	$6,720	$ 0
annual savings	$12,161	$12,161

Savings eligible for award calculation:

annual savings	$12,161	$12,161
less 75% of investment required	- 5,040	- 0
balance	$7,121	$12,161

Small group award, one-half of eligible savings:

	$3,560	$6,080

In both examples, the project rate of return (annual savings divided by the investment required, in percent) is greater than the 75% required to be eligible for an award. In example A, the project requires an investment of which 75% is subtracted from the annual savings in calculating the eligible savings. In example B, no investment is required and therefore there is no subtraction from the annual savings.

If the investment is $10,000 or over, the award would be paid after allowing a reasonable time to audit the project (not to exceed one year) after implementation, to insure the accuracy of the projected savings and award. If the investment is under $10,000, the award may be paid 30 days after implementation provided the benefits can be verified.

Awards for small group projects are made only to the small group, for distribution by the group among its eligible group members and other eligible employees who helped the group, should the group so vote. Employees eligible for cash awards are all except those whose job functions involve reducing costs, which we define as all managers, supervisors and engineers.

The Steering Committee may determine that a completed approved project is "intangible"--meaning the operation involved does not have standards on file, no time-ticket data is collected, no non-labor costs are collected, or the expense of verifying the savings is not justified based on the estimate of savings; and the total estimated savings does not exceed $5,000 annually.

For an intangible project the Steering Committee may determine and assign an annualized value for the purpose of determining an award. The committee will expect management of the areas involved with the project to review the group's estimates with group members for reasonableness. The small group award will be one-half of the annualized value as determined above.

Alternately, the committee may determine that, although the savings are obviously very worthwhile, there is no economically feasible way to quantify them. In that case the committee may award $50.00 to each small group member who participated.

RECOGNITION

Recognition continues to be a major consideration. In addition to the awarding of jackets and the formal management presentation, award checks are presented in a simple ceremony at a company general assembly. Hand-lettered posters of the event are made and put up in the assembly area that day, and an engraved brass plate with the group's name, project and date is added to the Small Group Awards plaque that hangs in the area.

We also present certificates suitable for hanging at the office or at home, for such events as completion of member training, completion of leader training, making a group's fifth, tenth, etc., management presentation, and completion of a term as a small group leader. Management tries to give lots of "atta boys" whenever people do well and make a contribution--and that is an important reason people want to contribute.

ADMINISTRATION

The Facilitator's roles are to assist the small groups and their leaders, and to run interference for the groups to assure them their proper priority for support from the company's management and staff. The Facilitator job is budgeted as part time, and he works 60 percent or more at his regular job as inspector in the Quality Assurance Department.

As further technical support to the Small Group Program, the Manager of Manufacturing Engineering appointed a process engineer to coordinate all small group technical activities with support functions, from group help requests through to implementation of projects and evaluation of results. This liaison engineer also meets with the Steering Committee to report on progress.

The Small Group Steering Committee manages the program. The responsibilities of the Steering Committee are:

Set the policies and objectives for Small Groups within program guidelines.

Allocate funds to the Small Groups to cover group expenses.

Assure adequate facilities (meeting area, equipment, and supplies) to assure effective meetings.

Review proposed projects to avoid duplication of effort between the salaried staff and the Small Groups.

View each Management Presentation and issue appropriate recommendations to the President for action.

Periodically review and monitor the Small Group Program performance and communicate with the rest of Tractech management.

Assist Facilitator in expediting help requests.

Audit projects completed by the Small Groups and implemented by the company for cost saving awards, and recommend a specific award to the President.

CONCLUSIONS

The small group program has seven active groups involving about 60% of our hourly employees, and one group of office secretarial personnel. The program has grown to the point where in the most recent 12-month period it produced 12 accepted and implemented recommendations, with awards totalling over $31,000 involving 69 individual awards as distributed by seven small groups among their 41 group members. In that period the project with the greatest impact on the company identified annualized savings of $50,200, and after deducting a portion of the necessary investment according to the policy, the eligible savings shared among the five member of the small group was $19,100, or $3,820 each. In that period the groups made 16 management presentations that they estimated have a total value of $238,000.

Even after four years, ideas for significant savings continue to be discovered. The capacity of the company staff to support group projects and to implement accepted recommendations, and sometimes agreement on the calculations of savings, are perhaps the only significant problem areas. Tractech's hourly and staff employees have not only learned to communicate and work together, but have also become quite adept at making business and economic evaluations in our manufacturing environment.

BIOGRAPHICAL INFORMATION

James E. Waldron, the Facilitator of Tractech's Small Group Program, is an hourly rated Inspector Leader and member of the bargaining unit. He has 18 years service at Tractech in which he has also set up and operated most of the machines in use here.

F: Program and Training Development

A Hospital Pharmacy Quality Circle Educational Video for Nursing Personnel

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The pharmacy quality circle at The Mercy Hospital of Pittsburgh chose to increase our nurses' knowledge of procedures that nursing and pharmacy share. Using quality circle methodology, interdepartmental communication, and management support, an educational video was produced for nursing orientation programs and staff inservices. The video developed by the pharmacy quality circle was intended to increase the staff nurses' understanding of how the pharmacy department is involved in total patient care. Also, we wanted to increase the nurses' awareness of procedures that the two departments have in common in order to function more efficiently as a team.

HISTORY

The pharmacy department is responsible for the safe handling, dispensing, and administration of all drugs and drug products throughout the hospital. The department is staffed by registered pharmacists and pharmacy technicians who assist the pharmacists. The pharmacy is open 24 hours daily and maintains a unit dose drug distribution system, an I.V. admixture program, a pharmacy procurement and inventory control area, an outpatient pharmacy, and a drug information center. After brainstorming our list of problems, the pharmacy quality circle felt that many of the problems that each area of the pharmacy experienced could be directly related to a lack of knowledge of policies and procedures that nursing and pharmacy share.

The "circle" first devised a list of procedures that the circle believed the nursing staff should be familiar. The list included: when and how to contact the pharmacy; the process involved in a patient receiving a medication; and, the different divisions of the pharmacy department (i.e. unit dose, sterile products, drug information, etc.). This list was presented to the nurses' quality circle to gain their insight, exchange ideas, and welcome their suggestions.

THE SURVEY

A survey was then developed and distributed to a randomized cross-section of 200 nurses and clinical secretaries from all three shifts throughout the hospital. This survey was intended to measure the knowledge of the existing nursing staff and request their comments. The survey consisted of closed-ended questions based on what the pharmacy circle members felt the nurses should know about the pharmacy department. Fifty-five percent of the surveys were returned and tallied.

The results of the survey showed that about 1/3 of the questions were answered incorrectly. The pharmacy quality circle concluded that some type of inservice needed to occur. The "circle" then agreed that the best way to increase the nurses' knowledge of procedures that pharmacy and nursing share would be to produce a video to be used for nursing staff inservices and orientation programs.

STAFF INSERVICES

With help from the nursing supervisors and managers, many alternatives on how and when to inservice nursing personnel were considered. The "circle" decided that the most convenient way to inservice the existing nursing staff was to inservice each nursing unit separately. Arrangements were made to have the pharmacy video and a VCR available on each nursing unit for a one week period. During this time period, nurses from all three shifts could view the video in their quieter moments. Each nurse was asked to sign a form when they watched the video so that the pharmacy quality circle could estimate the number of nurses who participated. A questionnaire was also made available to ask for their opinion of the video, its content, and for any additional comments.

At this time in the presentation, the pharmacy video, "An Introduction to the Mercy Hospital Pharmacy," will be presented. Following the video, the audience will participate by completing the same survey that was distributed to our nurses.

CONCLUSION

The pharmacy video has been a unique tool for inservicing our nursing staff. These inservices have opened communication between the nursing and pharmacy staffs and have increased nurses' awareness of procedures that pharmacy and nursing share.

As a result of using the quality circle process to produce a video, pharmacists and nurses can work more efficiently as a team to provide better patient care.

BIOGRAPHICAL INFORMATION

Donna L. Forbidussi, R.Ph., is a staff pharmacist in the Department of Pharmacy at The Mercy Hospital of Pittsburgh.

Charles M. Karnack, Pharm. D., is Manager, Pharmacy Operations at The Mercy Hospital of Pittsburgh and Instructor in Clinical Pharmacy at Duquesne University, Pittsburgh, Pennsylvania.

Anthony Battaglia is a Pharmacy Assistant I at The Mercy Hospital of Pittsburgh.

Nancy Martin is a Pharmacy Assistant I at The Mercy Hospital of Pittsburgh.

Dulcie Wilson is a Pharmacy Assistant II at The Mercy Hospital of Pittsburgh.

Second Generation Facilitator Training

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Most facilitator training courses assume quality circles are just getting started. How should your training change when you need more facilitators/leaders where circles already exist? Working independently, Martha Schoggen of Concurrent Computer Corporation and Joe Momyer of The Ingersoll-Rand Company developed materials and processes to meet this challenge. Working together on IAQC programs they discovered that the obstacles encountered were very similar and revised training materials worked well together. In 1986, their materials were combined into a second generation facilitator training course.

PERKIN-ELMER

Quality circles were begun at Perkin-Elmer (now Concurrent Computer Corporation) in 1981. At that time, an independent consultant was hired to carry out a four to six month "phase-in" of the philosophy of participative management. Packaged materials, recommended by the consultant were purchased and used for the initial training of the facilitator, leaders and members. The material consisted of an orientation, some group dynamics instruction (primarily focused toward leaders), and workbook/slide presentations of the basic problem-solving techniques. Training of new members/leaders consisted of approximately six to eight hours. This included discussion of the philosophy of QC's, how they worked within the organization, and how to brainstorm, construct graphs, pareto diagrams, etc.

By the third year, it was apparent that some changes were needed in the training program. Groups were confused about the use of the problem-solving tools. They were focusing on their use, rather than as tools in a problem-solving process. Members were launched into a group setting with little or no instruction about working effectively as a group.

In short, the program had outgrown the initial training material. To solve this problem, the facilitator introduced a full day of training on communication techniques and group dynamics, and shifted the circles toward the problem-solving process through the use of a model developed in conjunction with Mr. C. Albano, an Organizational Effectiveness Consultant at Fort Monmouth, New Jersey.

INGERSOLL-RAND COMPANY

Ingersoll-Rand organized its first facilitator training session in 1982. The first session was held in Los Angeles and focused on teaching the facilitators how to use the problem-solving techniques and how to instruct small groups effectively. The graduates returned to their facilities with marginal success. This lack of success caused a reexamination of the curriculum and an introduction of several changes over the next three years. First, a unit on productivity and the impact of foreign competition was added. This information, along with a readiness survey was to be used to identify obstacles to a successful start-up and as a way to build management involvement and support from the beginning. Second, a leader coaching model that facilitators could use to strengthen the leadership of the circles was designed. Finally, a measurement unit to enhance the circle's evaluation of their successes and failures was introduced to strengthen management's belief in the value of quality circles.

NEW TRAINING PROGRAM

In 1986, the improved course elements and materials from Perkin-Elmer, now Concurrent Computer Corporation and Ingersoll-Rand, were combined into a second generation training program.

Our new training program stresses four elements:

- Communication skills
- Problem solving process
- Meeting skills
- Recognition/motivation

It purposely minimizes the instructions of specific problem-solving skills, since they are readily available through vendor materials, were known to our current facilitators/leaders, and are easy to use when needed.

COMMUNICATION

Our experience showed us that the ability of a group to effectively solve problems depends upon the group's ability to communicate clearly. In our program we stress the following aspects of communication: effective listening, questioning, summarizing, non-verbal communication, handling killer phrases/put-downs, one-way/two-way communication and the importance of being familiar with your own communication style.

THE PROBLEM-SOLVING PROCESS

We discovered that by concentrating on the PROCESS of solving a problem, much of the mystery and confusion concerning "which 'tool' to use when" went away.

The use of an acronym makes remembering each step of the process easy. By organizing suggestions for tools under each step of the process, groups quickly orient themselves each week to "where they've been, where they are at the present time, and the direction in which they are headed."

The acronym we use is:

P
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S
A
E
D
I

Identify	(finding projects)
Define	(how to break the problem into smaller projects)
Explore	(how to collect data using internal and external resources)
Analyze	(interpreting and representing data)
Solve	(how to use creative techniques to generate potential solutions)
Upper Management Presentations	(what, when and how to present solutions)
Put Into Action/Prove	(implementation and assessment of project results)

EFFECTIVE MEETINGS

Ineffective meetings squander valuable time. Without management, group dynamics can be counterproductive. Without feedback and coaching, group leaders may resort to ineffective techniques borrowed from earlier situations. Recognizing this, we put together a teaching unit that addresses each of these concerns. Meeting structure is addressed through the use of survey and group discussion, group dynamics are identified and discussed via fishbowl activities. Training in effective feedback, group intervention and coaching are incorporated through the use of a specific model, produced by E. J. Metz. In addition, participants are taught to assess the well-being of the group through the use of questionnaires and surveys that identify the group's use of task and maintenance behaviors.

RECOGNITION

Training facilitators/leaders from diverse locations and businesses across the country, we felt that each recognition/motivation program needed to be uniquely tailored. In our program, we teach the participants theories of motivation and how to use them to increase the impact of their recognition programs. We then share examples from our organizations and other businesses throughout the United States.

Prior to leaving the session, participants construct a model recognition plan suited to their organization.

THE PROCESS CONTINUES

During the time that we've been using the new program, additional needs are appearing on the horizon. In the future, it appears that we will need to develop units that address issues such as gainsharing, self-managed work teams, management of technological change, etc.

These generations and changes are not competing forces, but are necessary steps towards fully utilizing the potential contributions of our employees.

REFERENCES

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BIOGRAPHICAL INFORMATION

Joe P. Momyer, M.S., M.B.A., is Manager, Human Resources for the Power Tool Division of Ingersoll-Rand. He was instrumental in designing Ingersoll-Rand's Facilitator Training Program and has trained over 200 facilitators in the United States, Europe and India. As Manager, Management Development, he was actively involved in Executive Development, Management and Sales Training.

Martha Schoggen was Employee Involvement Coordinator for Concurrent Computer Corporation. She developed many innovative ways to enhance the effectiveness of quality circles. Most notable are manager/leader/facilitator conferences, local facilitator networks and workshops, circle managed recognition programs, and computer applications in recordkeeping, measurement and management presentations. In 1985-86, she served as President of the Northern New Jersey Chapter of the IAQC.

The Cinderella Case Study: A Complete Training Exercise That You Can Use

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According to most definitions, Quality Circle members do three things: they identify, analyze and solve problems. The most successful circles go about these three major tasks in a systematic way. This session presents a practical and proven training exercise that can be used to help members, leaders and others to accept, understand and use such a system. Attendees will receive complete guidelines for the exercise including background, objectives, plan of instruction and variations. Portions of the exercise will be demonstrated during the session with some attendees participating. All attendees will be able to use the exercise for training others in their own organizations.

Background

Like many other trainers, I have found that participation in case studies and similar exercises can help trainees better understand and use techniques and skills being learned. However, it is often difficult to find exercises that can be used in a group with widely varied backgrounds. More than four years ago, I set out to create a "universal" case study to be used in Quality Circle training situations. I wanted the exercise to have the following features:

1. It would require participants to perform some activity allowing them to become Circle members with common "expertise."
2. Anyone, regardless of background, would be able to easily understand and participate in it.
3. It could be used with a group of people with many different educational and vocational backgrounds.
4. It would require no assumptions to be made by participants at any point in the exercise.
5. It would simulate the requirement for participants to contact sources outside their own Circle.
6. It would be flexible enough to allow many variations.
7. It would use materials readily available to the trainer.

The resulting case study was first used in a training course conducted in 1982. Since then, its popularity has spread. It is currently being used by hundreds of companies. It has been the subject of numerous written reports. Some companies have even videotaped the exercise. To date, the details of the original exercise have never been formally described in writing. This paper will finally satisfy the countless requests I have had to do so.

Briefly described, the exercise involves seven parts:

Part 1: Setup

Participants are briefed concerning the background of the case study. They are told that their job involves the tossing of various objects into boxes. Contract specifications affecting the manner in which they are required to do the work are also explained.

Part 2: Tossing

The "work area" is set up by the trainer in accordance with the previously described contract. Participants actually toss certain objects into some boxes all of which are provided by the trainer. Each participant keeps a record of his or her own performance.

Part 3: Data Collection

Participants, as members of a circle, organize the data they have collected using formats they have studied in other portions of the course.

Part 4: Pareto

Participants apply Pareto analysis techniques in an attempt to focus their attention on the most critical aspects of the situation they are experiencing.

Part 5: Cause-and-Effect

Participants perform a Cause-and-Effect analysis in an attempt to identify and verify the principal cause of the problem isolated in Part 4.

Part 6: Agenda Preparation

Participants prepare an agenda for a management presentation concerning their findings.

Part 7: Management Presentation

Participants make a simulated presentation to others in the training session.

Instructions

Specific instructions concerning each part of the case study follow:

Part 1: Setup

Step 1: Describe the situation to the participants as follows:

"Here's the situation for this case study. All of you work in the same department of our company. By most standards, the work you perform is very unique. Our company has several customers who have agreed to pay for the service of tossing objects into boxes. Since we have a business arrangement with our customer, we have signed a contract describing the conditions under which the work is to be done. Here are some of the key requirements of the contract."

Step 2: Give each participant a copy of the Contract Requirements sheet (Figure 1), the Work Area Layout sheet (Figure 2), and the Box Requirements sheet (Figure 3). Review the contract requirements sheet with participants and elaborate on each as necessary. I have found it helpful to stress the following points:

Requirement #1: This prohibits the use of machines or robots. The customer wants real people tossing these objects into the boxes.

Requirement #2: Have participants write in the types of objects you are using. (I normally use pencils, ping-pong balls and paper clips). Tell them that these objects have been obtained by management and they will be furnished to the tossers at the work site.

Requirement #3: This prohibits tossing a handful of objects at the box hoping that some will go in. It also prohibits linking items, such as paper clips, together and then tossing them all at once.

Requirement #4: Have participants refer to Figure 2. Have them write in the distances you are using. I normally use the following: x=0 (box against wall); y=0 (box on floor); r=24" min, l=24" min (box not in a corner); d=12ft min. Remind them that the contract specifies a minimum distance between the box and the tosser. It is permissible to stand farther from the box than specified.

Requirement #5: Have participants refer to Figure 3. Have them write in the dimensions you are using. I normally use the tops from a Kodak Carousel Transvue 80-slide tray box (H=2.5" max, D=10" max, W=10" max). Remind participants that the contract specifies maximum dimemsions for the box. Tell them that management has furnished the largest and deepest boxes allowed by the contract.

Requirement #6: This prohibits the use of any guiding device such as a chute, a funnel, a person catching items at the box, and so on. (This provision was added to the case study a year or two after its creation to prevent groups from jumping to obvious solutions.)

Step 3: Give preliminary instructions to the participants as follows:

"In a few minutes, you are actually going to do the tossing just described. During the tossing, each of you should keep track of your own performance. On a separate piece of paper, record how well you do with each item. Do not attempt to keep a combined group record at this time. The data each of you collect individually will be used to set up the next part of this case study."

Step 4: Caution the group as follows:

a. "Don't take this exercise too seriously. While that may seem funny, many will be surprised how frustrating the exercise may become at times."
b. "Don't overkill the project. Follow the process and use the techniques being taught. Don't attempt to interject too many other things that you may have learned in other training. In other words, keep it simple."
c. "Don't make any assumptions at any time during any parts of this entire case study. If the group gets stuck at some point due to lack of information or guidance, do what a real problem-solving group should do, ask. I'll play the roles of the various experts in our company. I'll also stop you if I see that you are making assumptions."

Note: I sometimes tell the group that a couple of the best tossers will get a prize later in the case study. However, I don't tell them the prize is being the leader of their team.

Part 2: Tossing

Step 1: Set up the work area in accordance with the sketches you gave to the participants. If space permits, each tossing operation should be set up separately. The minimum distance for the tosser can easily be indicated by placing a strip of tape on the floor.

Step 2: Have each participant do the tossing for all operations. To speed this part along, I have found it best to have them do the tossing in any sequence they desire. During tossing, remind participants to toss all objects. Remind them also to record their individual scores. (Data on group scores should not be collected at this time.)

Part 3: Data Collection

Note: This part of the case study normally takes place immediately following the study of data collection formats such as check sheets, diagrams, etc.

Step 1: Briefly review the situation for participants. Indicate that, as a group, they have already picked their project. On their brainstorming list it is stated as: "Too many misses in our tossing work." Appoint a leader for each group or have them select their own.

Step 2: Tell participants that they are now ready to move on to the data collection step. Give them the objective for this part of the case study as follows:

* Organize the data you have onto a check sheet *

Step 3: Turn the meeting over to the group leader. Observe the group as members attempt to achieve the objective. You may want to take notes concerning specific observations. If possible, intervene only when asked.

Step 4: Once the objective has been achieved, ask participants for reactions to the session just completed. Share your observations with them. Remind them that the next part of the case study will pick up where this one ends.

Part 4: Pareto Analysis

Note: This part of the case study normally takes place immediately following the study of Pareto analysis.

Step 1: Briefly review the situation for participants.

Step 2: Tell participants they are now ready to move on to the analysis step of their project. Give them the objective for this part of the case study as follows:

* Use Pareto analysis to decide upon which part of your project to focus *

Step 3: Turn the meeting over to the group leader. Observe the group as members attempt to achieve the objective. You may want to take notes concerning specific observations. During this part, members usually focus first on the number of rejects per object, or per tosser. Once this has been done, you may find it necessary to coach them to consider other factors, known or unknown, that could further impact their decision. See section titled "Supporting Data" later in this paper.

Step 4: Once the objective has been achieved, ask participants for reactions to the session just completed. Share your observations with them. Remind them that the next part of the case study will pick up where this one ends.

Part 5: Cause-&-Effect

NOTE: This part of the case study normally takes place immediately following the study of Cause-&-Effect analysis.

Step 1: Briefly review the situation for participants.

Step 2: Tell participants they are now ready to move on to the next step of their project. Give them the objective for this part of the case study as follows:

- * Use Cause-&-Effect analysis to determine the principal cause of the problem you selected as a result of Pareto analysis. *

Step 3: Turn the meeting over to the group leader. Observe the group as members attempt to achieve the objective. You may want to take notes concerning specific observations. During this part, group members often experience difficulty. Some may start focusing on solutions instead of causes. You may need to intervene at times to correct procedural errors. Some participants may attempt to convince others that the verification step need not be done. They may ask you if they really have to verify since this is only a case study. See the later section of this paper titled "Supporting Data" for some suggestions on this point.

Step 4: Once the objective has been achieved, ask participants for reactions to the session just completed. Share your observations with them. Remind them that the next part of the case study will pick up where this one ends.

Part 6: Agenda Preparation

NOTE: This part of the case study normally takes place immediately following the study of presentation techniques.

Step 1: Briefly review the situation for participants. In most cases, the group will not have had time to solve the problem. Remind them that presentations are often made to management concerning the status of a project.

Step 2: Tell participants they are now to move to the next step of their project. Give them the objectives for this part of the case study as follows:

- * Create an agenda to be used in a presentation of your group's project *
- * Determine which group member will present each item on the agenda *

Step 3: Turn the meeting over to the group leader. Observe the group as members attempt to complete the assignments. You may want to take notes concerning specific observations. Frustration over not having completed the project may produce tension between members at this point. Be prepared to help minimize this strees.

Step 4: Once the objectives have been achieved, ask participants for reactions to the session just completed. Share your observations with them. Remind them that in the next part of the case study they will actually give a simulated management presentation.

Part 7: The Management Presentation

Step 1: Give members a short period of time to organize their flip charts and other presentation aids. If more than one team will be presenting, meet with group leaders to determine the order in which they will do so.

Step 2: Have members of each group present the results of their project. Allow other training participants to comment and ask questions as if they were managers or other affected personnel.

Step 3: Once all the presentations have been made, ask participants for their reactions and comments. Share your observations with them.

Step 4: Ask participants for comments concerning the entire case study. Help them focus on specific benefits gained by going through the exercise.

Supporting Data

As discussed earlier, this case study was specifically designed to eliminate the need for participants to make assumptions. It also simulates the requirement for participants to contact sources outside their own group. Throughout the case study, you should be prepared to play the roles of various experts both within and outside the company. However, don't allow participants to just call on you arbitrarily when they want to know something. Insist that they first consider what particular department or individual might have the desired information. It usually helps to have someone explain why they think the additional information would be relevant.

I have found the following items to be most pertinent:

Cost Data

At some point in the case study, someone may realize that quantity of errors may be less important than cost of errors. This usually comes up during Pareto analysis. If it doesn't, you might choose to stimulate the thought. However, I would recommend against just telling the group that they should consider this factor. In any event, I suggest you use simple numbers for this part. Tell the group that amounts given are net value to the company. This avoids having the group get bogged down in irrelevant mathematical calculations. You'll normally find it best to select dollar amounts that will cause the results of Pareto analysis to shift. For example, when I use pencils, ping-pong balls, and paper clips, I normally value them at \$10, \$100, and \$5 respectively. If several groups are going through the case study at the same time, you can use the same dollar amounts or you can give different ones for each group.

Future Orders

Some members may realize that the group's Pareto analysis assumes constant demand for this service in the future. Again, you have several options. The simpliest approach is to say that demand will be constant for a long time to come. This is the approach I normally take. However, it has proven very interesting the few times I used varying customer requirements for each object tossed. This helped a few groups who quickly jumped on the variable cost data issue to see the value of looking beyond the obvious.

Customer Preferences

In the real world of business, not all decisions relate merely to dollars, schedules or quantities ordered. Some customers place high priority on other factors. I have found it useful to help participants realize that they should make every effort to see if the customer has any preferences along these lines. Once the issue has been raised, however, I nearly always indicate that no such customer preferences exist.

Contract Issues

As often occurs in real life situations, many participants will focus early on trying to get the contract changed. Some may begin to question contract requirements as they are tossing the objects in Part 2 of the case study. I can almost guarantee they'll raise this issue during the cause-&-effect analysis. Perhaps the simplest way to deal with this would be to indicate that contract requirements cannot be changed. Nevertheless, I have resisted doing so, thinking that would limit the group's willingness to be creative. Instead, I try to help group members recognize the value of first focusing on issues that they can affect. One way I've found helpful is to tell participants that another company is already providing this service for our customer, and that we're trying to win the business away from them.

Verification

As mentioned earlier, most groups are unable to actually solve the situation in the time allotted. Even if time permits, it may be impractical for the group to verify the cause they isolated in cause-&-effect analysis. I usually insist that the group not assume the verification was done. Instead, I have the group give the presentation as a status report. This helps further stress the importance for all groups to resist the temptation to cut corners due to time pressures.

Conclusion

Trainers who use this case study should find the information in this paper to be fairly complete. It is, of course, impossible to predict every possible scenario. In fact, I have found one of the case study's major strengths to be the fact that it's different every time. I have conducted it often with groups having several members who had worked through it before. I hope all of you who try it have as much fun with it as I have. I also challenge you to discover why I call it The Cinderella Case Study. (No prize will be awarded.) If I can ever be of assistance concerning the case study, don't hesitate to call me at Quality Circle Insitute.

Biography

Bernie Perry is Senior Vice President, member of the Board of Directors and lead instructor for Quality Circle Institute, Red Bluff, California. During the past few years he trained more than 2,300 Quality Circle facilitators from more than 1,500 organizations. In that time period he consulted on Quality Circles with some 5,000 executives, managers, union officers and potential Circle members in the U.S. and other countries. Bernie was a member of the original Board of Directors of the IAQC and founder of the Greater Louisville Chapter, the first chapter of IAQC. He is the author of various articles and books, and is a featured presenter in several videotapes concerning Quality Circles.

1. Tossing must be done by human beings.
2. The objects tossed must be as follows:

____

____

____

____

3. The objects must be tossed one at a time.
4. The placement of the box within the work area must be in accordance with sketches provided with the contract.
5. The size and shape of the box must be in accordance with sketches provided with the contract.
6. An object may touch only four things as it travels from the tosser to the box. It may touch the ceiling, the wall, the floor or the box. It may touch these four things in any combination.

Figure 1. Contract Requirements Sheet

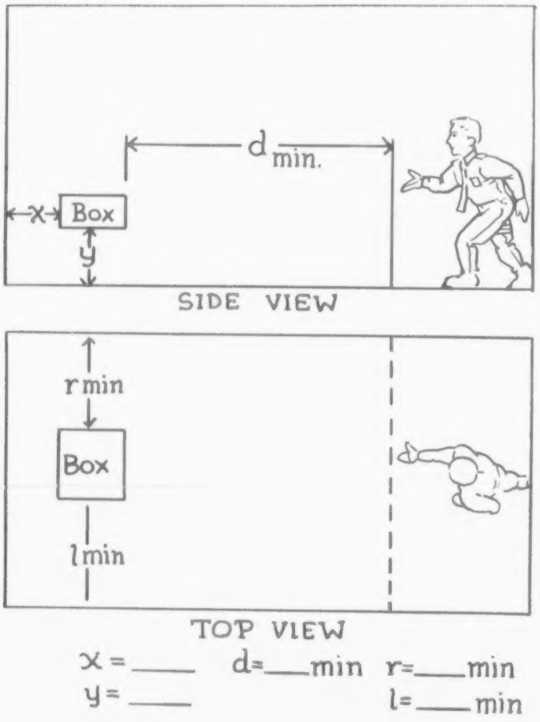
d min.
x
Box
y
SIDE VIEW
r min
Box
l min
TOP VIEW
x = ____
y = ____
d=___min
r=___min
l=___min

Figure 2. Work Area Layout

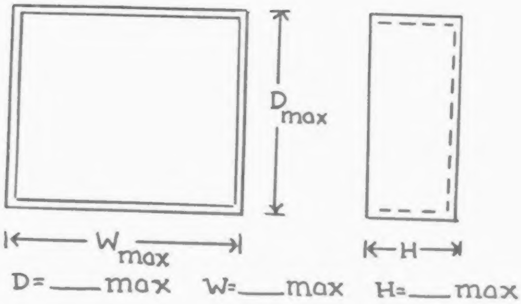
D max
W max
H
D=___max
W=___max
H=___max

Figure 3. Box Requirements

Group Facilitators: Key to Success...QC or Otherwise

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Crucial to the effectiveness of any organizational meeting or program, but particularly to Quality Circles, is the role of the facilitator. S/he must be able to work with people at all levels, be creative, flexible, and aware of the political atmosphere of the organization. Organizations desiring to expand their QC program in times of limited resources need to develop innovative ways of identifying and training potential facilitators from within. "Homegrown" facilitators provide a unique opportunity for organizations to develop their human resources.

To meet a perceived organizational need, three consultants, Ms. Barbara Saragovitz, Mr. Robert Slevin, and Ms. Renee Brotman designed and facilitated a training intervention which developed a receipe for homegrown facilitators. This program included a formal, five-day training session, individual training plans, strategy meetings, observations, and co-facilitating. From this experience they learned the following:

- Such a training effort gives an organization the opportunity to tap into another source of problem-solving skills. And, through that the individual becomes more useful to the organization.
- The skills learned in such a training program are transferable regardless of where an individual is in the organization.
- Managers who are willing to re-examine their own style and explore becoming more facilitative are more useful to the organization in problem-solving.
- Mixing managers and employees from different levels in a learning experience not only helps develop bonds, but creates a better understanding of each person's perspective of their job and the organization.

ORGANIZATIONAL SETTING

The Division of Engineering Services (DES) is part of the National Institutes of Health (NIH), largest biomedical research facility in the world. It is in this Division that this training intervention took place. DES provides engineering craft and labor services in the design, operation and maintenance of all NIH buildings, grounds, utility plants, and related equipment. Approximately 550 employees covering a multitude of disciplines work in the Division. Nearly 75% of them are employed in the trades: carpenters, electricians, pipefitters, sheet metal workers, mechanics, painters, nurserymen, etc. The other 25% are mainly engineers, architects, and technicians. Currently, there are seven Quality Circles in DES, a growth of four in the last two years. There are plans to continue expansion of the program in the coming months. QC's are located in the Carpenter Shop, Mechanical Shop, Clinical Center Maintenance Section, Power Plant, Electric Shop, Grounds Maintenance & Landscaping, and a Secretarial Circle which pulls members from across the Division.

RATIONALE FOR THE DEVELOPMENT OF THE PROGRAM

At the time of the Division's pilot QC program in 1983, external consultant Bob Slevin was brought in to facilitate the Circles. However, after rapid expansion of the program and an increase in his schedule, he needed to direct his energies elsewhere. Barbara Saragovitz, an internal manager was selected to facilitate the groups as an adjunct to her normal duties. As her work increased another part-time facilitator, Renee Brotman was brought in. During the expansion of the program, it became apparent that there was a real shortage of qualified facilitators.

In addition, the Division is also engaged in changing its "culture" by using a participative approach to problem solving as well as instituting a Circle program. The dilemma remained that there weren't enough trained people in group process skills to assist that effort and expand the QC program. DES was becoming aware of the great human resource potential in training more facilitators. Also, there was great interest on the part of some QC leaders to go one step beyond their role as a Circle leader.

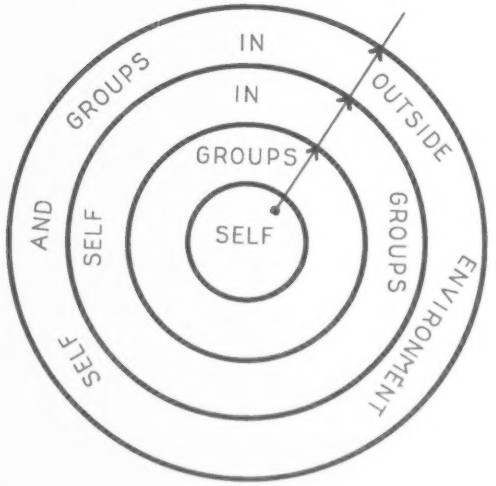
SETTING CRITERIA AND SELECTION PROCESS

In a meeting with the Division Director and the three consultants, a set of characteristics for suitable candidates was developed. These were developed from observations of people in group situations and experience with group dynamics. Additionally, the Senior Staff was asked to recommend people they thought might meet the criteria. Individuals inside the QC's and those outside initiated consideration as well. The criteria developed did not rely on traditional elements, i.e., education or seniority because the training program was to cut across staff levels.

There was anunderstanding established that this training did NOT guarantee a place as a QC facilitator. However, it was still useful to those not selected due to the nature of how the organization functions and the value the leadership placed on a participative style of problem solving.

FIVE-DAY TRAINING MODEL

A formal week-long training session was designed by the three consultants, who have all been QC facilitators. Eleven candidates were selected including an Assistant Branch Chief, Branch Chiefs, an EEO Officer, and several rank and file employees. The design followed a Target Model:



Training moved from the center of the target outward focusing on:

- SELF
- GROUPS
- SELF IN GROUPS
- SELF AND GROUPS IN THE OUTSIDE ENVIRONMENT

Methodology used a mix of:

- theory;
- experiential learning;
- journal keeping to track learnings and feelings;
- small- and large-group discussions;
- individual homework (including prework);
- self assessment instruments (Myers-Briggs Type Indicator, Learning Styles Inventory, Facilitators Checklist);
- extensive use of video taping; and
- peer and staff feedback sessions.

AFTER-TRAINING ASSESSMENT OF SUITABILITY

The first step of looking at suitability for facilitating in the QC program came from individual assessments done by each of the trainers. A joint meeting was held to arrive at consensus on suitability for the program. Feedback was developed for each candidate using a force field analysis model of those forces promoting a person's facilitative behavior and those inhibiting its development. Additional feedback was provided by the participants using video and written critiques. Each person in the training received a detailed analysis and recommended next steps for their own development.

The list of suitable candidates was formulated and discussed with the Director and final approval was given. Each candidate and their immediate supervisor was called in for a conference explaining the selection, time commitment requirements and suitability of the individual for the QC program.

APPRENTICESHIP

Once a decision was made on joining the QC program as a facilitator, candidates met and designed a schedule of periodic meetings. These were to discuss concerns/problems and review materials on QC's and group dynamics. New facilitators developed the agenda and ran their own meetings with their newly-acquired skills. Assignments were given on a rotational basis to each person to co-facilitate each QC under the supervision of Renee Brotman.

The new facilitator then was asked to design their own individualized training program citing what they felt they needed in order to be comfortable in the role of facilitator.

Once each new facilitator reached their level of understanding and practice they were assigned a specific Quality Circle to facilitate on their own. Including the formal training and the apprenticeship, the whole process covered a period of four months.

APPLICATIONS AND IMPLICATIONS FOR THE TOTAL ORGANIZATION

Those candidates that were not selected to be Quality Circle facilitators, either because of the nature of their work or because their style in groups proved less facilitative than first thought were, however, better equipped to deal with the work environment and organizational issues. An example is, as a result of his training and greater awareness of the impact of his style on groups, one participant initiated an organizational assessment effort in his Branch.

BENEFITS OF SUCH A PROGRAM

- Multiplier effect - especially when it involves the supervisory level. A more facilitative supervisor creates a climate of achievement and innovation.

- It compels individuals to look at their own development in the context of their organization.

- Develops a pool of facilitative skills that are crucial to the functioning of the organization that it can tap into when needed.

- Creates dialogue across staff levels which helps to diminish the "we/they" syndrome. And, in its place provides a climate for effective, collaborative problem solving.

- Enhances awareness and appreciation of Quality Circles across the organization by providing upper-level managers with insights into unforeseen benefits of a QC program.

- It allows the organization to expand its QC program through a homegrown process.

CONCLUSIONS

The Division has already begun to reap the benefits of training and using "homegrown" facilitators. The success of the program has prompted the scheduling of another class of potential facilitators. This also has been a source of support to the Quality Circle Program in that planning for expansion can be done knowing there will be trained facilitators available.

The more employees that experience the training and in fact practice their facilitating skills, the better equipped the Division of Engineering Services will be to meet the challenge of solving its tough, organizational issues.

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BIOGRAPHICAL INFORMATION

Barbara J. Saragovitz, M.A. is a management consultant at the National Institutes of Health, Division of Engineering Services. She is the Program Coordinator for Quality Circles in DES. She also consults to other organizations on Quality Circles and organizational issues pertaining to structural and/or internal dynamics.

Robert J. Slevin is a recognized expert in collaborative problem solving and participatory work practices. He is the originator of Creative Approaches Unlimited, a consulting group offering expertise in applied behavioral sciences, creative problem solving and meeting facilitation.

Have You Checked The Expiration Date On Your Canned Training Package?

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Like many companies, we began our Quality Circle program by using the services of a well known consulting firm. We were supplied with all the necessary materials to get started including leader and member manuals, cassette tape/slide lessons, etc. Although somewhat cumbersome, this package met our needs during the first few years until we began to expand our program to include other types of quality and productivity teams. Our senior facilitator began to design a Productivity Team Workbook to eliminate some of the problems we had found with the training package and to meet the needs of these new teams. This inspired us to develop a new training package incorporating the workbook.

The results have been beneficial as we have become more involved in what we teach and the employees now look forward to attending our training sessions.

This paper will outline the process we went through to customize our workbook and training package. Excerpts from the workbook and training package viewcells will be shown.

INTRODUCTION

Many companies purchase a canned training package when they start their Quality Circle program, but later find that a customized approach is more effective.

This paper will describe the process we went through to tailor our circle leader and member training packages to our requirements.

BACKGROUND

Telecommunications is a part of Rockwell Electronics Operations with facilities in Richardson, Texas. Its Quality Circle process began in April of 1981 with seven pilot circles. The process coordinator developed and conducted our first leader training class from material obtained from several sources, one a leading Quality Circle consultant. Those first seven circles were seeded throughout the facility to include both blue and white collar workers, and by 1983 the program had grown to 80 circles.

Although pleased with our overall progress, in early 1984 we began to examine the process to see how we could make it more effective. This examination was the start of an evolution from Quality Circles alone to a total employee involvement concept including several new programs.

Presently, 79 circles and teams are in operation, with 18 percent of the 4500 employees on campus participating. Our plans for 1987 include a new emphasis on expansion, with 30 new teams planned.

As the process grew and more training classes were conducted (24 classes with 300 participants to date), we began to see ways to improve our training package.

THE WORKBOOK

When we began our Quality Circle program, we purchased a training package from a well-known consulting firm. This package included circle leader manuals, member manuals, and 35mm slides synchronized with cassette tapes that covered the material presented in each chapter. At first, we showed every one of these 30-minute presentations to a new circle, which took ten circle meetings, or ten weeks. Later, we reduced the number to five, with the others used on an as-needed basis. This cut our training period down to five weeks. We used this package for about four years, and each year we became less and less satisfied with its format.

The manuals were big and bulky, causing many circle members to leave them at home or their work station, rather than bring them to circle meetings. The material itself was good, but wordy, which discouraged circle members from studying the chapters. The slides and taped lectures that accompanied the text were less than motivational. This also caused difficulties in training new members for established circles, because older members did not want to sit through the tapes again. Our training format made it difficult to schedule individual training for new members, so we usually waited until we had several new members and either trained them as a group, or gave their circle a refresher course. This sometimes caused established circles to lose momentum while waiting for new members to catch up.

For these reasons our Senior Facilitator began working on a Productivity Team Workbook, which would be much smaller than the old manuals. It would be organized in a self-teaching format, and give only the essential problem-solving techniques, without all the circle history and theory in the old manuals. Several places for team members to write notes, such as ideas for the brainstorming list, and possible causes for the problem would also be included. To aid teams in establishng their goals, blank project action plans were included for their use.

Since we now had problem-solving teams that did not fit the classic circle definition, the emphasis would be on problem-solving techniques, rather than circle techniques; the word circle would not appear in the workbook. This would make the workbook useful not only to circles, but all problem-solving teams.

The first draft was prepared and circulated to the facilitators for their comments. After several revisions, everyone was satisfied with the text. We then decided to brighten it up with some of the new cartoon viewcells developed for our revised Leader Training package, which will be discussed in more detail later in this paper.

Our goals were to develop a workbook that would lead an inexperienced team member step by step through the problem-solving process, be interesting enough that people would actually read it, and therefore be more likely to be used by team members.

The finished workbook has 37 pages, compared to the 297 pages in the old circle leader manual and 223 pages in the member manual. The chapter titles are identified on the edge of each page, which makes it very easy to find a particular topic. Although the facilitator usually helps lead a new group through their first project and often adds material not found in the workbook, such as group dynamics, the self-teaching format allows a team to begin working on a project right away, without weeks of training.

The workbook has been in use for over a year, and most team members use it faithfully. As a result, our teams now experience less confusion, more effective meetings, and faster problem solving.

THE LEADER TRAINING PACKAGE

After the workbook outline was introduced to the staff, we were so pleased with it that we decided that updating our 3-day leader training package was a must. We wanted to make it as informative and enjoyable as possible while tying the new workbook into the training.

The leader training package we started with contained too much lecture, too few activities and breaks. It had wordy viewcells that matched handouts we provided for the participants. Even if the trainers weren't reading from the viewcells, and interjected personal experiences, the package still left a lot to be desired. Participants became hypnotized staring at the words on the viewcells. We had not yet discovered that one picture is worth a thousand words. Our viewcells used the thousand words approach.

We needed to emphasize our key points by using more pictures and fewer words. In the first meeting to update the training package, we brainstormed for the format, the theme, and the characters to be used. Theme ideas such as a circus, the wild west, and outer space were suggested. "A Trip Across The USA" was selected, because we felt it was a theme that wouldn't date itself. For characters, a college coach and six students were selected. Each was to be a classic example of the personality types identified in the group dynamics portion of our training; the monopolizer, deserter, blocker, distractor, etc. We then mapped out our vacation route and selected tourist attractions along the way.

In the past, we held separate training sessions for leaders and assistant leaders. Both were taught problem-solving techniques and group dynamics, while leaders were also trained in listening and communication skills, motivation, intervention, data gathering, and other skills required to conduct productive meetings. When it came time to outline the agenda for the 3-day leader training, we scheduled all problem solving techniques and group dynamics on day one so we could train leaders and assistants at the same time. We encourage assistant leaders to stay for all three days — and many of them do. By formatting our agenda this way, we eliminated the need for two separate training classes. Combining these classes allowed us to hold training more often due to the added number of participants. Since leaders no longer have to wait as long to be trained, their initial enthusiasm remains high.

After setting the agenda, we selected locations to be visited by our cartoon characters and divided the training package into segments. Each facilitator took a segment, and had to provide a story line to teach the material, using the tourist site as the setting. Thinking up the story, tying it into the training, using the tourist site, drawing stick figure cartoons and choosing the words for each viewcell was a real challenge. Some of us enjoyed making up the stories but couldn't come up with the cartoons, while others loved to draw but had a hard time relating the training material to a story line.

We began holding impromptu meetings to help each other with our segments. We developed a strong team atmosphere during this time. The project was exciting; our ideas were taking shape, and we could see it was something that would be of mutual benefit to us as facilitator/trainers, as well as our future team leaders.

Once the new training package was complete, we began to use the new productivity workbook in the leader training sessions, thus eliminating many pages of the handout. This approach helps familiarize future team leaders with the contents of the workbook. We are also using more exercises, such as role playing, to keep the participants more actively involved.

CONCLUSIONS

We owe much of our success to our Graphics Services Department, who took our words and stick figures and transformed them into what you've seen today. Our cartoon style viewcells with fewer words made both training and learning more interesting and enjoyable. The participants seem to pay more attention and retain the material much longer now that the learning is fun.

Although many companies don't have access to a graphics department, there are alternatives, such as recruiting someone within your organization who has artistic ability, or using a vendor. When revising the viewcells, remember to make them picture oriented. From the results we are seeing, we feel this was worth the time and expense involved.

Cutting through the bulk of our original training package has proven to be a positive move. Our problem was an information overload. Even though the information we provided was of value, it was in too much detail. Thanks to this effort, we have better trained leaders and team members who use their workbooks at every meeting.

Judging from the enthusiasm of our leaders and trainers, the cost of customizing our training package was a wise investment in the future of the employee involvement program at Rockwell Dallas.

BIOGRAPHICAL INFORMATION

Paula Van Derlinden has been an Employee Involvement facilitator since January of 1985. She has a BS degree in Human Relations and is the membership chairperson of the local IAQC chapter in Dallas, Texas.

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G: Organization Support

Quality Circles, JIT, Deming Users, Juran Teams: The Link

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ABSTRACT

Remarkable similarities exist between quality circles, just-in-time, Deming-users and Juran teams. These are similarities in goals, problem-solving processes and techniques, implementation opportunities and difficulties, training requirements, problems in institutionalization, and many others. Those companies which already have quality circles can use their understanding of circle processes and implementation when they go to just-in-time, Deming's 14 points or Juran quality improvement teams.

INTRODUCTION

The purpose of this paper is twofold. First, we want to show managers, circle facilitators and trainers, and others what features are common to the four concepts, and how this knowledge from quality circles will help in developing successful, smooth implementations of the other concepts. Our second purpose is to show how just-in-time, Deming-users and Juran teams complement circles; and, consequently, how an organization can weave all four together as part of a very powerful, overall business strategy. To accomplish these purposes, we define the four concepts and discuss their commonalities. Next we look at how an organization can transfer knowledge of one concept to any or all of the others. Finally, we discuss how quality circles complement Juran quality improvement teams, Deming's 14 points and just-in-time.

DEFINITIONS

Let's define each of the four concepts briefly. (We will go into more detail when we talk about their commonalities.) We assume most in the audience are already familiar with circles; but for those who are not, here is a short definition. Quality circles are small groups of people from the same work area who voluntarily meet on a regular basis. They identify, solve and implement (with management approval) solutions to their work-related problems.

Juran teams are formal problem solving groups, usually at staff or management level. They are formed to solve specific, mainly quality-related problems. Membership is cross-functional, but that is not to say there could not be a team from the same work area, lab or office. Whoever has an interest in seeing the specific problem resolved is on the team. Juran teams follow a stricter problem solving sequence than what is taught in the usual circle process.

It is hard to give a simple definition of Deming-users since they may not be formal groups like circles or Juran teams. They are individuals or groups who use Deming's philosophy as stated in his 14 points along with statistical process control techniques to regulate their process.

Just-in-time is primarily a manufacturing procedure involving supplier, producer and customer. One definition goes, "The right piece arriving at the right place at the right time." It requires high quality in product components and delivery. Among its purposes are waste reduction in materials, time and effort, and lower inventory. In just-in-time or JIT manufacturing, work is organized by product or product families rather than by process function. Workers are trained in all skills required to make the the product instead of being specialists in, say welding or press operations. JIT is not a problem solving group or process as such.

COMMONALITIES

We have worked in the area of quality circles and problem-solving groups for nearly twenty years. Therefore it's not surprising to hear proponents of any of these concepts complain of middle management resistance; wonder how to gain top management's active support; or express concern about institutionalization. The problems, opportunities and needs of all four are remarkably similar. Let's examine some of these similarities.

Top Management Support

The need for top management's support, involvement and participation goes without saying: it is absolutely essential for the long term, vigorous health of these four activities. Need for top management involvement has been a recurring theme at circle conferences: national, regional and local. We will not discuss it further. JIT manufacturing must have it because of capital expenditures, money for training, reorganization of plant layout and other aspects that are required for such a major change. JIT impacts very heavily the way a company deals with its customers as well as its suppliers, and certainly has great effect on production. Since only top management can coordinate, direct and control such broad activity, it is incumbent on them to plan and guide, and be intimately involved in it.

In the case of Juran teams and Deming-users, it is imperative that top management understand the need for daily, relentless pursuit of improvement. More than this, top management must lead continual improvement by doing it. This understanding and practice are just as important to JIT and circles. We already know implementation of circle projects requires management approval. This is also true for solutions devised by Deming-users and Juran teams, especially since these solutions sometimes affect more than one department. It is upper management that OK's, or denies, monies for budgets, training or capital expenses.

In our experience, without active support and participation of the highest levels of management, Juran teams, quality circles and Deming groups fall by the way. For example a plant was using both Juran teams and quality circles very successfully. The plant manager nurtured the teams and circles. Then he was transferred. The new manager was "supportive" but was not as actively involved. When we talked to the Juran team facilitator, she said that both circles and Juran teams were disintegrating. Because JIT requires major management interventions, it too is as dependent on top management commitment as the others.

Institutionalization

As we have said, top management support and personal involvement are essential for the successful operation of any of these four activities. Support and active personal involvement are equally necessary for the long term. What we mean by long term is the "institutionalization" of the concepts where they become the natural way of doing things, the SOP (standard operating procedure). It's the sort of remark you hear about circles: after several years we may not even call them quality circles, we'll just naturally be working that way. Or, with the Deming philosophy, it's a statement to the effect: this is the way everybody thinks around here, walks, talks, in every way and every day.

Each of these concepts has encountered serious difficulties in becoming the normal, natural way of doing things, in being institutionalized. The reasons are many. We will list a few. (1) A Japanese businessman is quoted as saying: "Until your company presidents stay in office 25 years, you'll never be able to beat us." (2) In the United States we tend to be results-oriented. But it's the process that needs attention, especially management's attention. (3) At the 1986 ASQC conference in Anaheim, Bill Ouchi challenged the audience to move away from the adversarial-relationship to one of cooperation. (4) Managers don't understand the work of Rensis Likert. (5) Managers think of themselves as bosses, not as leaders and coaches as Tom Peters recommends. (6) We view work as a curse laid on us. Especially significant is our view that the burden for this has fallen primarily on hourly employees, but we, as managers, are somehow above it. We fail to see the liberation inherent in the Redemption and so we fail to see that work, at all levels, is an outlet for one of man's most precious possessions: personal creativity. (7) Institutionalization takes a long time. Likert says it takes at least three to four years to change an organization. (8) We fail to train our subordinates to replace us. (9) Employees come and go, at all levels, so there is little continuity. And so forth.

What can we do to institutionalize these concepts? Dr. Deming would say that it is not a matter of hard work. Rather, it's a problem of knowing the right thing to do. We offer some suggestions. (1) Convince boards of directors to keep top managers in place for many years. (2) Use the "Timothy Principle". This means that managers carefully select and train replacements. They choose people who are faithful and able to teach others. The replacements are trained in the four concepts and the values inherent in them. Managers, as their superiors, coach them, lead them, give them opportunites to show their stuff. Top managers must prepare their subordinates not just to take over the reins of the organization in the future. They must prepare managers who will have similar values, knowledge and goals, and who will, in turn train their subordinates to do likewise. (3) Dr. Juran's suggestion is to make improvement of quality an integral part of the annual business plan. (4) 3M expects its research and development people to spend 10% of their time on unauthorized job activites. This is a specific way to encourage creativity.

Middle Management Resistance

The problem of middle management resistance is endemic. We saw it in the early days of circle activity in the U.S. at an assembly operation. The plant manager was enthusiastic and so were the hourly employees. Middle managers were plainly upset. We have seen it again more recently in a JIT production facility.

There are many reasons. A big one is fear. A superior may hinder, even sabotage, subordinates who are in circles, Juran teams or using SPC because the superior is afraid he will be "shown up". There is fear of new behaviors resulting from technical or cultural changes. This was quite clear in a JIT operation. Middle management was asking: If the JIT modules (which are manned by hourly employees) are doing what I am supposed to do, why does the company need me?

Part of the explanation for resistance is top management's failure to manage change and to understand the effectiveness equation:

> The effectiveness of a solution or program depends on the quality of the solution/program plus commitment to it on the part of those who have to make it work.

If middle management has not had a role in the planning for JIT, adoption of SPC and Deming's philosophy, quality circles or Juran teams, is it to be wondered at if they resist the implementation of techniques/programs for which they feel no ownership?

Training

Practitioners of all four concepts receive training in varying amounts, with somewhat different content and at different levels. In the case of Juran teams, there is typically a one day introduction for top management. Once teams are formed, their training consists of working through sixteen video tapes on the universal breakthrough sequence and the accompanying manuals. Some of the topics are: proof of need; project identification -- Pareto analysis; organizing for diagnosis; breakthrough in knowledge; holding the gains. (In 1986 Juran introduced a second series of training materials "Juran on Quality Planning.") As the team studies, members choose a project and practice their new problem-solving skills.

JIT training varies with the company. In one company training consisted of a three day course for trainers, a one day introduction for managers and staff and three weeks for module members. The three weeks break out as follows. The first week covers (1) group process, (2) concepts of JIT, and (3) enlarged job skills which now include self-inspection, how to reduce set-up time and cross training in different aspects of building the product. The remaining two weeks are practice in working in the new way.

There are several ways in which an organization can become involved in the Deming approach. Usually a few top managers attend a four day seminar. Topics include Deming's 14 points, variation and statistics, and management use of control charts. The company may then develop its own training in statistical methods, contract for consultant training or use local community colleges. Use of Deming's principles tends to be limited to statistical process control in manufacturing areas with some use by R and D. In some instances one or more individuals hear about Deming and/or know some statistics. They then begin to apply their knowledge in the immediate work area. In the case of Procter and Gamble, engineering began using statistical methods and developed their own courses. Engineering went on to "infect" some middle managers. Eventually top management became involved and various levels have attended Deming seminars. As a result of the seminars, they have improved the training courses. Further, management is beginning to work on the organization.

Typical quality circle training consists of a one day introduction for managers, key staff and potential facilitators. Next is three to five days of facilitator/leader training that covers basic concepts of circles, problem solving tools and process, and group dynamics. Circle members receive eight to twelve hours of training combined with practice.

The following chart will illustrate specific tools.

	Quality Circles	Juran Teams	Deming Users	JIT
Data collection	X	X	X	*
Variation	*	*	X	
Histograms	X	*	*	
Pareto analysis	X	X	X	
Control charts		*	X	*
Check sheets	*			
Scatter diagrams		*	*	
Strati-fication	*	*	*	
Experimental design			X	
Brainstorm	X	*		*
Cause and effect	X	*		

Key: blank = little or no use
* = some use
X = much use/essential

IMPLEMENTATION

Whenever we implement any new concept, we experience difficulties. One of the biggest is resistance to change. This is so because change does not occur in just the technical area. Dr. Juran told us years ago that with every technical change, there is an accompanying one in the culture of the organization. It is this cultural change that gives the most difficulty because it affects how people think and act. Unless this facet of change is very well managed, stiff opposition is likely.

Bias For Success

Many practitioners of quality circles have experienced resistance as they have begun circle activity in their companies. Often it has been an uphill battle. Being the creative and resourceful people they are, they have developed ways to overcome resistance arising from the cultural change circles bring. One strategy is to bias the circles for success. They choose those areas of the plant or office where there will be the greatest likelihood for success. They know people like winners. We know of a similar success in a JIT application. You can use the same strategy if you are planning to start Juran teams, JIT or SPC.

Start Small

A second strategy is to begin small with only three to five circles. This allows others in the organization to look them over without feeling threatened. Similar procedures are followed for starting Juran teams and JIT. Anyone using SPC or Deming's philosophy should start with manageable chunks.

Steering Committee

The steering committee for quality circles has proven effective in dealing with cultural change. It encourages management ownership and involvement in circles since management is making decisions and setting guidelines. Membership on the committee includes all the power bases. The steering committee concept is applicable for JIT and Juran teams.

Facilitation

We have often observed that we, in the U.S., don't know how to work together in groups very well. Circle practitioners have overcome this handicap through people called facilitators. It has been the job of facilitators to train circle leaders and then assist in training circle members. Another thing facilitators do is monitor group process. Facilitators act as liaison for circles with other parts of the company. Those involved with Juran teams are beginning to recognize the need for facilitation activities. We suspect this will prove true for JIT modules and any one working as groups on SPC and Deming's philosophy.

Training

Those in quality circles recognize the essential role of training. The most important thing training does is change technical and social behavior. In the implementation phase, training is used for introducing the concept. This is when people from across functions and levels, as well as both labor and management, are shown what circles are and are not, what they do and don't do. In short they are given a vision of what circles are about. Some of these same people receive indepth training in specific problem solving tools, the problem solving process, group dynamics and leadership/facilitation.

The indepth training is tailored to the level of employee: circle members get one thing, leaders/facilitators get a great deal more. Management, staff and union representatives may receive only the introduction although there is some question why they should not receive the entire four days of training.

Think about the following. When a company which already has quality circles begins to implement any of the other three concepts, it will find it has already broken the "educational barrier". People will already be used to training as an important activity in their business. Consequently, they will find training is more easily accepted when they start into one the other three.

INTEGRATION

Goals

In all four concepts we see that the goal is a striving for perfection, where the emphasis is on the "striving". In JIT, for example, the goal is a lot size of one unit and a die setup time of zero (ZED, zero exchange of die). The Japanese talk about mere minutes for die exchange -- and then tell you what they are doing to achieve even quicker results. Presently the dies in the world's largest press can be changed in about one hour. Deming's 14 points stress continual improvement of technical processes and organization. Can we ever achieve perfect quality, not only of product but also of service, delivery, price, and market research? No, but we can work to develop an organization that drives out fear, that begins to understand the PDCA cycle and other Deming principles. Juran teams, too, strive for improvement. Pareto analysis, a basic tool in their toolkit, tells them to tackle and solve the big problems and come back to the little ones later. (Even if all little problems are completely cleaned up, changes in technology will introduce new ones.) Quality circles, like Juran teams, also follow Pareto analysis in solving problems. Their work, too, is never finished.

As we have seen, the goals of all four concepts is continual improvement. Traditional American management practice has been otherwise. Formerly a few people -- managers with the help of engineers and other select staff -- planned the organization. Once the plan was executed, those managers who ran it were required to adhere to the original plan. Notice the following. (1) The implication is that the plan, as originally conceived, is perfect. (2) Only managers, with selected help, develope the plan. (3) Once implemented, all personnel in the organization are to follow the original plan and are evaluated accordingly. (4) The plan is static; that is, any improvement in it is incidental, because the organization's job is to meet the plan, not to improve upon it.

In contrast, the four concepts discussed in this paper are hardly traditional. Each recognizes at the outset that, since perfection is the goal, the organization's new charge is not only to meet the management plan but continually, relentlessly to improve upon it. In this continuous improvement process, Juran teams emphasize the role of managers. Quality circles involve hourly employees. Deming-users stress the use of statistics as well as management's critical role in developing both the technical processes and organization. JIT pushes waste reduction and lowers inventory as a way to force problems to surface.

Problem Solving Techniques and Processes

Interrelationship of the four concepts shows up most clearly in their common language of problem solving. The vocabulary of this language is problem solving tools, the problem solving process, data-based decisions, and, with the possible exception of Deming-users, group activities. The tools include: brainstorming, cause-and-effect analysis, data collection, Pareto analysis, frequency histograms, scatter diagrams, various graphs, check sheets, stratification, sometimes even control charts, as well as other techniques. The group may start the problem identification process through brainstorming, Pareto analysis or even a suggestion from outside. Possible causes of the problem emerge through brainstorming and cause-and-effect analysis. Pareto analysis lets data, that is the situation itself, tell it's "own" story and helps set priorities on where to spend problem solving energy. If the problem is one of statistical variation, the group may then use frequency histograms, the concept of stratification, scatter diagrams, and even control charts. Check sheets are a valuable means of seeing the structure of the data. Various kinds of graphs are useful during the problem solving activity as well as for presentation purposes. Data collection is, of course, inherent in many of the tools. In summary, the groups use a highly structured, well defined, and data-based problem solving method.

How They Complement Each Other

This section summarizes what each of the four concepts does and how it does it. This gives a base for understanding their complementary natures. We are describing what each concept offers, its potential, not, unfortunately, what is current practice in the United States.

The Juran Institute has a three part plan for training: "Juran on Quality Breakthrough"; "Juran on Quality Planning"; and "Juran on Quality Control". The first is a series of video tapes with accompanying manuals and deals with the breakthrough function. The planning segment has just come on the market. The one on control is still being developed. "Juran on Quality Breakthrough", the subject of Juran Institute Impro's since 1983, concentrates on solving quality problems. It has managers as groups, with staff assistance, identifying and solving large, system problems which often cross several departmental and functional lines. "Juran on Quality Planning" moves attention to the planning phase so that quality will be built into the processes, systems and organizations of the company. We expect that the final segment, "Juran on Quality Control," will focus on maintaining specified levels of quality, i.e., the control function. In all three, managers are to be at the helm improving, planning and controlling quality. They should use these skills to solve all kinds of issues which their companies face.

Quality circles improve quality, reduce costs, lower waste levels, improve safety, increase morale, etc. They function as groups of hourly employees, with supervision. Their activities, unlike Juran teams, are primarily at the local or departmental level.

Just-in-time concentrates on waste reduction of any kind, be it defective parts, excess inventory, long lead times, unnecessary cost. Results include: enormous quality improvements, huge decreases in WIP (work in process), less rework, less floor space, etc. Furthermore, JIT uses continual reduction in inventory as a means of forcing managers to improve company processes and systems. JIT also requires radically different facility layouts. Relationships with vendors and customers differ greatly from traditional ones, in that customers and vendors are considered partners in the business.

One way users of Deming's philosophy strive for improved quality is by revamping the way the organization itself thinks and acts. The organization's thinking and behavior changes as management works on Deming's 14 points by driving out fear, bringing in training, recognizing the critical, major role of management, etc.

Second, when top managers themselves use SPC to bring processes into statistical control, they have a tool which helps them sort out the system causes from the special causes. For the first time, top management can see clearly what Drs. Deming and Juran have been telling them for decades. It is management that is responsible for the system problems; the hourly operator is responsible only for special causes, only for those instances when an otherwise stable process goes out of statistical control.

In summary, Deming's 14 points, JIT, Juran teams and quality circles are philosophically consistent with one another. All pursue continual improvement. All four, to a greater or lesser degree, recognize and nurture group activity. In the ideal organization, these four concepts would be the way top management would be managing.

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BIOGRAPHICS

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Bob and Davida studied quality circles in Japan in 1972. They have written and edited books and numerous articles on quality circles and were invited speakers in the United Kingdom, Brazil, Costa Rica, and South Korea. They are co-authors of SPC Simplified published by UNIPUB (Kraus International). Both are members of the IAQC editorial review board. They do management consulting and training. Bob is a former director of the IAQC as well as past chairman of the Quality Circles Committee of the ASQC.

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Huber Heights, Ohio
January, 1987

Beyond Whatever Is Next
(The Search For Participative Management Without Management Participation)

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The word "Beyond" has always held a mystical power and when used in concert with something familiar, it offers the promise of something "better." Nowhere is this more evident than in a discussion of the methods by which we manage our work environments. Even the most egalitarian environment is at times less humane than we would like it to be, so we are drawn as moths to the flicker of whatever seems to promise a greater reward with less effort. Alas, though we find with each new promise another dismal performance, we continue to haunt bookstores and seminars in search of the magic formula which will guarantee our success.

It is necessary to seriously examine this trend and its negative effects upon organizations in every element of our culture. Some work is being done now, to evaluate the cost of continually moving from one program to another without ever realizing the long-term benefits that any of them promised. While those studies are going on, however, we must concentrate on the causes of so-called failures so they can be avoided, if possible, in the future.

With that in mind, we will first discuss some of the most common causes of disenchantment with virtually all participative management processes, including, but surely not limited to the Quality Circle process. From there we will move to some techniques which have proven remarkably successful in improving the effectiveness of new and existing participative efforts. The first and most common cause of "failure" of any participative process is impatience.

IMPATIENCE WITH ANY PROCESS WHICH REQUIRES GENUINE PARTICIPATION

Throughout the history of organizational management, we can clearly see the evidence of impatience with any process which would bridge the artificial gaps between the bosses and the bossed. Since about the mid-twenties, managers have been diluged with hundreds of "new" processes and methods for improving the operations of their organizations. The results of all these schemes have been remarkably similar, in that short-term changes have not resulted in long-term improvements.

Managers of those organizations have, for the most part, implemented the Quality Circle process in a very "hands-off" fashion. They have attempted to provide the "workers" in their organizations an opportunity to "participate", without much of an understanding of just what it was they were going to participate in. Most of those managers have been either too afraid or too uncaring to ask. They have never viewed the Quality Circle process as something they must lead and participate in themselves.

Then when the process has proven to be no panacea and many of the same old problems still exist, those same managers have blamed the process, rather than become involved and truly participate with their people. Most say they really don't have the time to become involved with their people, that what they really want is some process by which their people can solve their own problems without a lot of management's time.

As seen in most organizations in which management takes that approach, no process can be successful in anything other than the shortest of terms. Once the Circles or Teams or Groups or whatever the participative units are called, have resulted the most local problems, they begin to work on things which require at least information from their managers. That, of course, is the very nature of "participation". Individuals are expected to exchange information and become somewhat involved with one another. That takes time and in most cases significant change from the norm of the organization's operations. Further, none of those changes can happen without management participation.

Today, we are witnessing the same phenomenon in regard to the Quality Circle process. Managers, trainers and organizational development specialists are combing the byways of the human resource development field in search of whatever lies beyond the Quality Circle process. Because most organizations which have implemented the process in any form, have purchased it as a plug-in program and have made little attempt to understand the organizational nuances which have made it successful in other organizations.

Specifically, most managers have not established measurable goals for the process and then when they become disenchanted for some reason, they claim that the process doesn't work and that it is time to look for something better. These managers are vainly looking outside their organizations for solutions to their organizational dysfunction, when, in fact, the only lasting solutions lie within the organization itself. Only those managers and the people they are responsible for can truly resolve their problems, because they are the ones who have created the environment in which they find themselves.

Most of the new processes have been developed and perfected over a period of time and usually in one location or one company culture. Then when it has been shown to be successful in that specialized, often sheltered environment, the developers have packaged the process and marketed it as applicable in a wide variety of organizations.

Often, the downline implementations are attempted in organizational cultures which have only a remote resemblance to the original organization. Further, because the concept is now packaged, it is looked upon as a plug-in solution to all problems. In management's haste to experience the benefits promised by the new process, they have overlooked or ignored the organizational nuances which made the original so successful. The results of such an approach continue to be very predictable. Most plug-in solutions prove to be no solution at all and the organization is, in fact, worse for the failure than if no change had been attempted.

On the other hand, virtually all the truly successful applications of any participative management process have been the result of considerable preparation and management commitment to improving their own performance. Every manager who would be worthy of the title must realize that participative leadership is the only absolute ingredient of lasting success.

LEADERSHIP IS A PARTNERSHIP IN WHICH NONE ARE SILENT

The list of promises by managers and business leaders, usually made in good faith, but later broken out of ignorance or worse, seems endless. The time has come, however, when we can no longer tolerate such performance. Managers must become participative leaders if we are to regain industrial and commercial stability. There are no more easy answers, if indeed there ever were any. What lies ahead is not going to be easy for most of us called managers, but it is now quite clearly a matter of survival.

Lawrence Miller, in his book, American Spirit describes eight principles which he believes American managers must practice in order to survive. Miller calls his eight principles Purpose, Consensus, Excellence, Unity, Performance, Empiricism, Intimacy and Integrity. In High Output Management, Andrew S. Grove points out many of the same things in a much different method, but the message is the same: Managers must become adept at melding the needs of the organization with the needs of the individuals who comprise the organization or there will be no organization.

It has been said so many times it's almost trite to point out that our workforce is different today. Education, experience and expectations are all vastly different than they were even ten years ago. The problem seems to lie at least in part in the fact that most senior managers of today were middle managers and supervisors ten years ago. They became experienced in managing and directing in ways which proved successful then, but are largely out of step today. Likewise, our markets are vastly different and our entire business climate offers very different challenges today. In short, today's managers must be willing to change their management style much more readily and perhaps much more frequently than their predecessors.

What is abundantly clear, is that we must cease the practice of aimlessly wandering from one huckster's promise to another in search of success without effort or change. It is an old adage, but a true one: "If you keep on doing what you've always done, you're going to get what you've always got." What that means to me is that if we continue to flit from one "participative program" to another, our management practices are going to continue to be about a decade behind the needs of our organizations. That translates into a continuing problem in meeting the challenges of the market.

We must finally realize that intelligent leadership is, at it's base, a partnership in which none are silent. Rather than continue to look for whatever program lies "beyond", we must begin to look for solutions to our problems within our organizations. We must learn that genuine participation by and with our people is the only tru road to success.

CAUSES OF OUALITY CIRCLE FAILURES

Virtually everything that can be said about the so-called "failure" of the Quality Circle process, can and has been said about every other concept to precede it. Sadly, unless we dramatically change the way most of us perceive participative management, the same things will be said about whatever concept or process we believe is "beyond" the Quality Circle process. The major causes of failure are: Lack of understanding of the processes, lack of patience, poor implementation, few if any measurable goals and an almost universal lack of managers actually practicing, leading and articulating the processes they hope will prove effective.

In short, the very elements each such process has required to be effective, have been eliminated or overlooked at the start. Then as each subsequent process fails to live up to it's billing, the process is said to have "failed" and again we hear the cry that it is time to move "beyond" that process. What we must recognize is that the process has not failed; indeed, the managers who attempted to implement the process without proper understanding of either the organization or the process have failed. That is truly the hard lesson of all this: If we are to meet the challenges which lie "beyond", we must look to the solutions which lie "within."

Rather than continue to search for the next program, the one lying beyond the one we are involved in now, we must, instead, look far into the future of human relations in our organizations. We must, in fact, direct our attention to whatever lies "Beyond Whatever Is Next." That is the only way in which we can hope to achieve any parity between what we are doing with the individuals in our organizations and what those individuals actually need in the way of training, respect, and fuller participation in the working third of their lives.

Of course, if we were to actually concentrate on being better and more participative than whatever the next program will allow us to be, we will find that we are on a continuum which will lead us back to a thorough examination of where we are now. We will find ourselves looking to the improvement of our current practices in our existing organizations. We will be drawn to the inevitable conclusion that until we master what we say we are doing now, we will never be ready for whatever lies "beyond". We will also find that as we begin to understand what we are doing and how we can become better at it, we will have gone far beyond whatever is next.

THE PRINCIPLE OF SIMPLICITY

I would add at least one principle to Mr. Miller's eight principles. I would add the principle of SIMPLICITY. I remember being told as a young Engineering student that one of the greatest sins of practicing Engineers is the great desire to design the most complicated solutions imaginable. I didn't understand my professor at the time, but today, I know what he meant and I would expand his admonition to include most managers and other problem solvers throughout our society.

The sophists of our culture would have us believe that simple solutions to most of our problems are somehow wrong. They use the derogatory term "simplistic" to shun all but their solutions. That kind of thinking has led us to where we are now, unable to recognize the value of plain common sense and the responsibility to treat every individual in every organization as an intelligent, capable, contributing human being.

The most basic rule to follow to achieve quality in any endeavor, including the development of a participative management environment, is the KISS principle. Not the crude expression with which we are all familiar, but a positive and effective use of those four letters: KEEP IT SIMPLE AND SUCCESSFUL". A primary reason for the poor performance of many of management's efforts to improve the quality of products, services and work environment is the fact that most such efforts are complicated with structures which actually interfere more than they help. Those complicated procedures and structures are thus seen as a waste of time and are ignored or badly applied.

Four simple words will guide management to success in every situation: Specific, Conditional, Measurable and Accountable. Specifically, what is it that needs change? Specifically, what will the situation feel like, look like, sound like, be, when it is the way you believe it should be?

Under what conditions have you noticed the individuals or things not performing as you believe they should? Under what conditions should the specific performance be undertaken? Under what conditions should the specific corrective actions be taken?

How is the current performance being measured? How will the future performance be measured? Are there interim steps which should be measured, and how? Who will conduct the measurement, when and where?

Who is responsible for each element of the situation? Do they know they are responsible? What rewards (positive or negative) will be received if the desired performance is or is not achieved?

Time and space do now allow us to explore any of these in sufficient detail, but suffice to point out that none of this is new, nor is it complicated. It is merely a common sense approach to goal setting and problem solving. This approach is based on the concept of starting with the macro and moving to the micro only as required; starting with the simple and moving to more and more detail only as required.

Start with the premise that most, if not all, your people have come to work in your organization because they see that relationship as somehow beneficial to themselves. Follow that premise by looking for ways to combine the needs of the individuals with the needs of the organization. Of course, not all personal needs can be met in that context, but surely the need to be treated as an individual human being can be and everything else stems from that.

Simple? Yes! Simplistic? No! It will not be easy to change the way we manage our organizations in order to take advantage of such a policy, but we have tried nearly every other concept and we find ourselves increasingly less able to cope with both the internal and the external challenges to our management capabilities. Ken Blanchard in his book The One Minute Manager, implores us to seek simplified solutions and practice simplified behaviors in all our management situations. The value of Dr. Blanchard's advice has not been lost upon the myriad writers who have since attempted to apply his principles to whatever they have been writing about.

To genuinely, openly, willingly and consistently treat every individual in every organization as an individual with individaul needs and individual motivations is not an easy task. It is not an impossible task, but it will take great determination and willingness to change. It is not yet evident that the bulk of managers are either knowledgeable of the need to make such changes or willing to do so when they realize that is what is required for the very survival of our culture.

A FORMULA FOR SUCCESS

Quality has been defined in various ways, but the one definition which seems to make the most sense to most people is: "Quality is the satisfaction of the customer's specification." Those words, in and of themselves, require considerable explanation, but there is a formula which explains them and when followed, leads to success.

The simple formula consists of three words and is even simpler when reduced to three letters. I call this simple formula the Quality Management Formula^{TM}. The three words and their corresponding letters are: Quality (Q), Performance (P) and Standard (S). When "customer satisfaction" is seen as Performance to a Standard, it can easily be seen that Quality is a numerical One (1).

P/S must = One or Q doesn't exist. There is no such thing as good or bad quality. Likewise, there can be no such thing as + or - Quality. The Performance of the individual, organization, service or product either matches the expected Standard of Performance or it doesn't. This is not an easy concept to understand, but until it is accepted and applied throughout our organizations, we will continue to be surrounded by individuals who believe and behave in a "just good enough to get by" performance. That is precisely what got us where we are and if we want to get beyond where we are we must change our management Standards and our management Performance.

By combining the Principle of Simplicity with the Quality Management Formula^{TM}, we will be forced to reexamine our management Performance in light of the Standards of our customers. What makes this proposal all the more challenging, is the fact that we are not dealing with one "customer". We are faced with our employees, the customers of our management style; the consumers of our products and services, the customers of our management abilities and certainly our stockholders, the customers of our managerial custodianship. The fact that these three groups have Standards which seem at variance with each other notwithstanding, our job as managers is, in fact, the job of balancing our Performance to achieve those various Standards.

It seems quite clear, that unless we become much more adept at tapping the creative talents of every individual in our respective organizations, we cannot hope to achieve a Quality management performance. It also seems clear, that unless we develop a truly participative environment in which every person knows that he or she is expected to perform to his or her individual best, we will continue to waste the only self-increasing resource we have: The creative human being.

CONCLUSION

The development of a genuine Participative Management style is surely no guaranty of success for any enterprise, but it is becoming increasingly clear that long-term success will be impossible to achieve without it. The development of such a process in any organization requires thorough planning and prodigious effort at the very highest levels of the organization. Implementation of those plans must, in turn, be nurtured and modeled by the organization's leaders in everything they do. Finally, true participation results from the application of very clear, very simple principles.

Participation begins with a clear understanding of what exists and what you want to exist in your organization. Those goals and Performance Standards must be expressed in Precise, Measurable terms and every individual must know in his or her heart that he or she is expected to achieve those Standards. That begins with the leaders of the organization, with Performance, not just supportive talk.

Every management process, including the Quality Circle process has been flawed in virtually every implementation, because each process has been seen as one in a continuing procession of programs. Once we understand that no on such process is right for every application, we will be left with the realization that the individuals who make up the organization hold the solution to virtually every problem within the organization. To recognize the fact, is to recognize that you are at that moment Beyond Whatever Is Next.

Ohio Bell
AN AMERITECH COMPANY

CWA

CREATING THE ENVIRONMENT:

THE IMPORTANCE OF RESOURCE SUPPORT

PAM ZISS: Staff Employee Involvement Consultant/Manager, Support Services Department, Ohio Bell Telephone, An Ameritech Company

AL BECK: Ohio Co-Ordinator; Communications Workers Of America, District 4, Network Services, Ohio Bell Telephone, An Ameritech Company

A critical factor in any successful employee involvement process is the commitment, dedication, and resourcefulness of key management and union leadership of any leading edge organization. Focusing on the organization's Joint Steering Committee, which provides a vehicle for these key leaders to create an environment conducive to a productive employee involvement effort, is in order.

A study of this key resource group and its effect on the circle structure, facilitator group and entire process is submitted.

The Ohio Bell Telephone Company developed it's initial Quality of Worklife/Employee Involvement Process in 1981. The process was implemented in a number of various ways throughout the corporation.

Our focus will be on one segment of that effort by looking at the Support Services Department of Ohio Bell. The Support Services Department currently employees approximately 1,400 of Ohio Bell's 14,000 employees and (20%) are management employees and the remaining 80% craft employees members of the Communications Workers of America Union.

The department's responsibility is to provide support functions to Ohio Bell, i.e., Clerical Support, Buildings Maintenance and Repair, Purchasing Equipment and Supplies for the corporation, maintenance and purchasing of its transportation fleet, provide food and conference facilities, and other associated functions.

Support Services formed its original Steering Committee early in 1981. Due to a number of factors, the committee dissolved and was re-established in 1984 with the assistance of the Departmental Coordinator. The role of Departmental Staff Coordinator was redefined and expanded from that of a trainer/organizer to one of consultant, facilitator and trainer. The coordinator integrates the various Support Services statewide by coordinating and establishing communication between the circles and key management and union leadership who comprise the Steering Committee. Associated function responsibilities are to research and promote the process within the department. This department has an effective resource with the coordinator who works with the Communications Worker's State Coordinators. The CWA coordinators have a similar responsibility to promote and enhance the process. Some examples might be:

The Quality of Work Life Steering Committee supports an environment conducive to QWL.

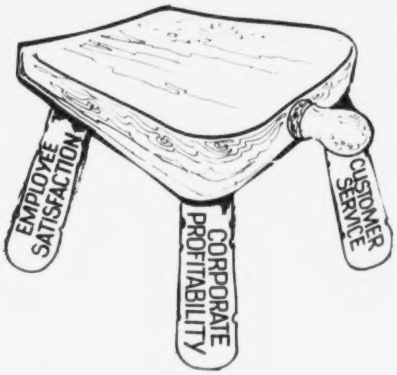
The Steering Committee:

- Serves as a model of union and management cooperation.
- Sponsors activities that enhance the QWL process.
- Aids circles through communication and education.
- Establishes an environment where QWL will thrive.
- Communicate the QWL philosophy whenever appropriate.

Tied into the activities of the specific Steering Committee members are the Support Resources associated with the Steering Committee. The Support Resources, we believe, are the bottom line key to maintaining the environment that is in place. Earlier we discussed the Department Staff Coordinator and the C.W.A. State Coordinator. Equally important, are the Department Circle Facilitators, who in addition to working at their regular jobs, devote time to circle facilitation. These employees, both management and craft volunteers, are trained by Ohio Bell and C.W.A. and are assigned to specific circles. These facilitators provide current support to the circles and up-to-date activity modules for specific circle concerns such as; Circle Image in the Department or Advanced Problem Solving. Armed with the facilitator packages as a training aid, the facilitators are able to direct each circle toward a desired end as established by The Steering Committee.

Currently, the circles are focusing on three areas of priority, the current efforts are aimed at:

- Increasing Corporate Profitability
- And Employee Satisfaction
- And Increased Customer Service



Examples of this effort are shared at the conference presentation.

Looking to the future of this department's effort, a number of goals are established annually. These include:

- To continue to monitor the effectiveness as a Departmental Steering Committee to achieve the goal of being the recognized model of Ohio Bell.
- Provide departmental support for facilitator training and necessary human resources.
- Issue invitations to facilitators/circle leaders/circle members to attend Departmental Steering Committee meetings. Include other participative management groups as well.
- Expand departmental support to include other forms of participative management groups.
- Involve upper level management and union representatives.
- Provide pertienent information/projects/issues to circles for their input and recommendations.
- Promote and encourage individually and as a group, participation in the QWL and participative management process at every opportunity at every level.
- Seek opportunities to attend circle meetings.
- Encourage circles to utilize the working definition of QWL (employee satisfaction/cost effectiveness/tenant and/or client satisfaction.
- Attend "State of the Art" Seminar to keep abreast of current happenings in the participative management process if necessary.

The Support Services Department of Ohio Bell is just one example of the Employee Involvement Process. Other efforts are equally as energetic. The energy exemplified by this segment of the Ohio Bell Team is conducive of the fine tradition at this operating Bell Company of Ameritech.

BIOGRAPHIES:

Al Beck is the Treasurer of the Communications Workers of America, Local 4302, in Akron, Ohio. With eighteen years of service at Ohio Bell, he has held positions of Splicer, Systems Technician, and Installer/Repairman (Group 1 and 2). He has been Treasurer of Local 4302 for eleven years, and has served as a Statewide Quality of Work Life (QWL) Coordinator for five years and is a member of the State Support Staff. Al is a member of the Statewide QWL Newsletter Editorial Board, is a member of several local Steering Committees, and is a consultant, facilitator and trainer for the QWL process at Ohio Bell. He is on the Board of Directors, and is Treasurer of the International Association of Quality Circles. Al has an Associate Degree in Commerce and is completing a degree in Labor studies at Akron University, Akron, Ohio.

Pamela Ziss is an Assistant Manager in the Support Services Department. She has been employed by Ohio Bell for 16 years. She has held a variety of both management and non-management jobs, including positions as a Sales & Service Representative, a Technical & Generic Trainer and a Line Supervisor in the Business Office. Pam became involved in QWL in 1984 serving as a department coordinaator, consultant, facilitator and trainer. Her responsibilities are statewide for the Support Services organization. She works with Steering Committees, Facilitators and circles. Pam is the President of the IAQC Greater Cleveland Chapter. Pam has a BA in Interpersonal Communication from Cleveland State University, Cleveland, Ohio and is currently completing her Masters of Communication.

Handling Problems Beyond The Team's Control: A Structured Method for Management Problem Solving

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This paper explains the formation and functioning of a mid-management Support Committee to address problems which are beyond the control of employee-supervisor problem solving Teams. This Support Committee, in the largest self-contained hotel/convention center in the U.S., represents all departments of the hotel, solves interdepartmental problems, and uses the same problem solving method as the employee Teams. In the first ten months of its existence, this Support Committee solved 47 problems generating savings in excess of $430,000.

PURPOSE OF THIS PAPER

The purpose of this paper is to explain how the Involvement Team process (Quality Assurance) at a major convention hotel (Opryland Hotel) was implemented, and how management solving of problems beyond the Teams' control was ensured.

REASONS FOR IMPLEMENTING PARTICIPATIVE PROBLEM SOLVING IN A HOTEL

"Perhaps nowhere else in the American work scene is there a more dynamic, evolving climate for participative problem solving than in the hospitality industry." (1)

"Hotels and motels are 24 hour, seven day a week operations dedicated to the comfort, service, entertainment, and security of their guests. Each functioning area of hotel and motel operations, whether it be housekeeping, room service, front desk and reservations, food and beverage, or sales and marketing, must maintain high standards of employee performance in order to achieve guest satisfaction and return business."(1)

"Hotels also possess a unique 'product' in the form of guest service. The 'product' provided to the guest should be individually packaged in the friendly smile and prompt, courteous attention provided by a motivated service staff. The importance of this service to overall hotel 'quality' cannot be underestimated." (1)

In view of the above, a most important investment on the part of hotel management is in their employees. People serving people could be the by-word of the hotel industry, and an investment that can pay off in guest and employee satisfaction is the creation of an Involvement Team process.

"Organizations, such as hotels, whose customer satisfaction and organizational performance is based on the timely and courteous providing of quality products and services, have an excellent opportunity to achieve many benefits by creating participative problem solving teams." (1)

One hotel which has had a successful experience in implementing a participative problem solving Team process is Opryland Hotel. The following information describes that experience.

HOTEL SIZE, LOCATION AND MARKETING

Opryland Hotel is America's largest, self contained hotel/convention center and is located in Nashville, Tennessee in a suburban area of the city. The Hotel opened in 1977 with 614 guest rooms and 800 employees and expanded in 1982 to 1068 guest rooms and 1800 employees. Due for completion in the Spring of 1988 are another 800 guest rooms and a staff increase to 2350 employees.

The bulk of the Hotel's business is from conventions, meetings and exhibits, rather than from tourist trade as might be expected since the Hotel is part of the Opryland USA complex. The Grand Ole Opry and Opryland Theme Park are located close by.

DIVERSE EMPLOYEE POPULATION

The employee population is extremely diverse in that 23 nationalities are represented with a high concentration of those of European and Asian origin. The age span of employees ranges from 16 to over 70. Some employees hold doctoral degrees and others have barely completed elementary school. Several employees are non-English speaking or are functionally illiterate.

CHALLENGE FOR EMPLOYEES

Turnover in the hospitality industry is generally high. This can be attributed to numerous factors including relatively low pay, fluctuating business (and therefore fluctuating number of hours to be worked) and demanding schedules (operating 24 hours a day year round takes its toll). Employees willing to accept these aspects of their job, find that working in the hospitality industry can be a challenging and exciting experience. People who enjoy serving people in a fast-paced, rapidly changing environment succeed.

MANAGEMENT AND EMPLOYEE COMMITMENT REQUIRED

Given all of the challenging elements of the hotel environment previously described, the providing of high quality service and products can be difficult. In response to this concern, the American Hotel and Motel Association (AH&MA) formed a Quality Assurance Committee to promote a process which would better enable the Association's members to meet the needs and demands of its guests/clients. Field tests of this process show that it can be successful only if there is mutual commitment from both management and employees.

DECISION MADE TO IMPLEMENT THE PROCESS IN THE HOTEL

The Manager of Opryland Hotel, Joe Henry, as a member of the AH&MA Committee observed how successful the process could be (if both management and employees were committed to it), and decided that it would be a good process for Opryland Hotel.

Several factors that influenced the decision to implement the Involvement Team (Quality Assurance) process were:

1. Top management belief that the person doing the job knows how that job can be done best, so they should be involved in problem solving to a great degree

2. Decision making and problem solving was being done at higher levels of management/supervision than necessary

3. Particularly after the hotel expansion, there was a need for an integrating force that would channel the efforts of individuals at all levels within the organization to work towards attaining the same set of goals:

    a. Meet the needs of guests and employees

    b. Remain competitive

    c. Control costs.

DEFINITION OF THE INVOLVEMENT TEAM (QUALITY TEAMS) PROCESS

With the decision made in 1985 to implement the participative process, the following definition was created:

Quality Assurance is one way in which quality, productivity, efficiency, profitability, and guest and employee satisfaction are improved. We accomplish this through:

1. The work of employee problem solving teams, known as Quality Teams
2. Developing and following standards, which are the guidelines of how each job is to be done, and
3. Using the feedback provided by our guests.

DECISION TO UTILIZE A CONSULTANT

The management of our Hotel felt that employing a consultant would allow us to tailor the process for our property and better ensure a successful implementation. This decision was one of the best we made as the assistance provided by Price Gibson & Associates has proven to be invaluable.

When looking for a consultant we had three main criteria:

1. Depth of experience (both as a consultant and as a practitioner)

2. Flexibility

3. Reasonable cost

Price Gibson and Associates met the hotel's criteria and was utilized to provide the services outlined in this paper.

STEPS IN INITIATING THE PARTICIPATIVE TEAM PROCESS

In order to maximize its potential for achieving benefits from an Involvement Team process and minimize the risks associated with a "homegrown" process, Opryland Hotel chose to use a wide variety of services from their consultant.

Listed below are the basic services and numbers of days of on-site assistance provided to the hotel:

1. On-site planning with the Coordinator (Manager of Quality Assurance) for the Team process (1 day).

2. Executive management overview on the basic structure and functioning of a Team process (1 day).

3. Computer-scored assessment of management and employee attitudinal readiness for an employee-management participative problem solving process (1 day).

4. Feedback on attitudinal assessment data and recommendations to executive management (1 day).

5. Training and planning with the Steering Committee relative to objectives, roles, placement of Teams, measurement of impacts, development of guidelines, etc. (2 days).

6. Training for the Coordinator and part-time Facilitators on their inter-related roles, implementation guidelines, problem solving techniques, etc. (3 days).

7. Training for one full-time Facilitator was provided in the consultant's 5-day public workshop.

8. Training for Team Leaders in objectives, guidelines, roles, techniques, Team leadership, etc. (4 days). (3)

9. The Manager of Quality Assurance (Coordinator for the Team process) participated in 11 days of on-site training; plus received 2 additional days of individual consultation (for a total of 13 days).

10. Six months after the initiation of the Team process the consultant conducted evaluation meetings with the Coordinator,full-time Facilitator, Team Leaders and Team Members. (1 day)

11. In addition to utilizing the above services the hotel utilized the consultant's training Handbooks for the training of personnel at all levels.

PROVIDING A HOTEL STAFF FOR INITIATING THE TEAM PROCESS

"The staffing of the process by a Coordinator and other support personnel should be carefully considered in light of the traditional high turnover rate that hotels and motels experience. Contingency plans need to be worked out for replacing all those in key Team roles who leave the organization or who change organizational assignments and drop out of Team roles."(1)

"While several unique attributes of the hospitality industry impact the design and functioning of the Team process, the majority of participative roles, training, and problem solving techniques are functionally identical across industry boundaries. A Team is still a Team whether it is housekeeping personnel or assembly line operators." (1)

STARTING TEAMS AND IDENTIFYING PROBLEMS

In September of 1985, six hourly employee departmental Teams began meeting. The Teams brainstormed problems and after clarifying their lists, categorized the problems, using the following three criteria: (3)

1. "Quick Success" problems that are small and have an obvious solution which "jumps out" at the Team. The solution can be implemented by the Team Leader and/or one of the Team Members over approximately 1-3 weeks of minimal analysis and action.

2. "Inappropriate", "Too Big" or "Off-Limits" problems which are:

    a. Very large or comprehensive in nature, very involved and/or time consuming to analyze and solve.

    b. Residing in or with another department over which the Team has no control.

    c. The special responsibility or concern of management

    d. On the off-limits list of pay, benefits, scheduling, personnel policies and procedures, and personalities.

3. "Appropriate" problems which:

    a. The Team has the knowledge and expertise to solve.

    b. Are within the department so they can "stay at home" and solve it (possibly with normal assistance from support department personnel)

IDENTIFYING MANY PROBLEMS "TOO BIG" FOR THE TEAMS

When 203 problems (approximately 1/3 of all identified problems) were categorized as "too big", the Team Members felt that they could not be certain action would be taken on these problems. This issue was brought before the Steering Committee, which decided there needed to be some formal structure to ensure that these problems would also be solved. In February 1986 the Support Committee was "born" to address problems too big for the Teams.

PURPOSE OF THE SUPPORT COMMITTEE

The purpose of the Support Committee is to systematically solve or coordinate the solving of problems of an interdepartmental or hotel-wide nature which have been identified, clarified and categorized by the Quality Teams as "too big" or inappropriate for the Teams to solve.

OBJECTIVES OF THE SUPPORT COMMITTEE

1. To provide a formal structure for management action on the list of problems provided to the Support Committee by the Quality Teams
2. To promote interdepartmental problem solving using systematic, data-based methods
3. To increase communication, cooperation and teamwork between departments
4. To increase understanding of the operations of the various departments
5. To further distribute problem solving responsibilities and decision making to middle management, thus moving to a more participative style of management
6. To enhance the work of the Quality Teams
7. To broaden the scope of Quality Assurance
8. To improve the relationship and trust between management and employees

MEMBERSHIP ON THE SUPPORT COMMITTEE

The following divisions or departments and job positions are represented on the Committee:

1. Convention Services (Director)
2. Accounting (Assistant Controller)
3. Engineering (Chief Engineer)
4. Food & Beverage (Assistant Director)
5. Rooms (Assistant Director)
6. Quality Assurance (Manager)
7. Research & Development (Cost Analyst)
8. Housekeeping (Director)
9. Purchasing (Director)

Ad Hoc Members of the Committee were:

1. Sales/Marketing (Director)
2. Personnel (Director)

ADDING/DELETING SUPPORT COMMITTEE MEMBERS

Recommendations for adding or deleting members on the Committee or changes in membership status are to be presented by Committee members. The Support Committee, as a whole, must approve this action, with final approval being given by the Hotel Manager (upon consultation with the Policy Committee member(s) involved).

TERM OF SERVICE ON THE SUPPORT COMMITTEE

Membership is not voluntary on the Support Committee as it is essential that the normal "chain of command' is followed with the problem solving that is done outside of the Teams. Therefore, as long as an individual is in the position designated for representation on the Support Committee, he or she will be a member.

CHAIRPERSON OF THE SUPPORT COMMITTEE

The Chairperson of the Committee is elected by the Committee and serves for one year, from January to January.

MEETING DAYS AND TIMES FOR THE SUPPORT COMMITTEE

Meetings are held on Mondays, with the exception of the third Monday of the month, when the Steering Committee meets. Meetings are for an hour and fifteen minutes (from 3:30 to 4:45 p.m.)

ABSENCES AND TARDINESS

Being present, on time and staying for the entire meeting is crucial to the success of the Support Committee. Therefore, every effort is made to arrange schedules to accommodate the meetings.

The following guidelines for attendance are followed by Support Committee members, with enforcement being the responsibility of the Policy Committee: Three unexcused absences per year is unacceptable. Excused absences include: illness, vacation, death in family, leaves from work, scheduled time off, work related emergencies or dealings with clients/guests which are unavoidable. If a meeting falls on a holiday, it will be re-scheduled. Three unexcused tardies equal an unexcused absence. Committee members are to notify the Chairperson in advance of the meeting if they are going to be late, absent or leave early. If a Support Committee member is unable to attend a meeting, an alternate may not be sent. In this case, the member's department or division will be unrepresented at that meeting.

VISITORS AND INVITED GUESTS

Visitors are welcome at Support Committee meetings. There is a limit of two per meeting. Anyone interested in visiting must contact the Chairperson in advance of the meeting. From time to time, special assistance or information may be needed from certain individuals in order to proceed with problem solving. Support Committee members may invite these individuals to the meetings as necessary.

METHODS OF DECISION MAKING

Decisions made by the Support Committee will either be consensus or unanimous decisions. Majority or Chairperson decisions will not be made.

CODE OF CONDUCT FOR THE SUPPORT COMMITTEE

Members follow the Code of Conduct shown below and fulfill the member responsibilities for the Support Committee:

1. Attend all meetings, be on time and do not leave early.
2. Learn and use the problem solving techniques.
3. Actively participate in and complete the required training.
4. Address the problems in our area of responsibility and expertise.
5. Understand that off-limits topics are pay, benefits, personnel policies and procedures, and personalities.
6. Provide information and contact resources needed by the Committee.
7. Participate in presentations to management as requested.
8. Track the follow up done on solutions and the measurement of the impacts.
9. Assist in publicizing Committee results.
10. Evaluate Committee meetings.
11. Listen to and respect the ideas of others and keep an open mind.
12. Attempt to reach an agreement on all decisions.
13. Follow the plan for the meeting.
14. Every individual shares the responsibility for the progress of the group.

MINUTES OF SUPPORT COMMITTEE MEETINGS

Minutes are taken by the Q.A. Secretary, and are in the same format as for the Quality Teams. Minutes are distributed within 48 hours of the meeting to Support Committee members, Steering Committee members, Team Leaders and Policy Committee members.

REPORTS BY THE SUPPORT COMMITTEE

A Quarterly Report is made by the Support Committee which states its accomplishments, progress and obstacles faced.

TRAINING OF SUPPORT COMMITTEE MEMBERS

All members of the Support Committee, department heads and other managers at their option will complete 16 hours of training in the complete problem solving process. (3) This will better enable these individuals to determine the root cause of problems and solve problems in a manner consistent with the Quality Teams principles and systems. By using this data-based, systematic approach, the problem solving done outside of the Teams will be more closely aligned with the work of the Quality Teams.

PROBLEMS NOT ADDRESSED BY THE SUPPORT COMMITTEE

Problems categorized by the Committee as "Too Big", Inappropriate", or "Off-Limits", (3) will not be addressed by the Support Committee. In addition, those problems which have been categorized by the Teams as "Too Big" or "Inappropriate", but are contained in the one department where the Team is located, will not be addressed by the Support Committee.

RESULTS OF SUPPORT COMMITTEE ACTIVITIES

In the first ten months of its existence the Support Committee solved 47 problems, with over $430,000 in associated savings. Considering the comprehensive nature of some of the problems addressed and the fact that the group was in a training mode for the majority of these ten months, we are extremely pleased with the Committee's progress. Granted, we have a long way to go and many problems to solve, but we expect the pace of the Committee's problem solving to increase, now that the members are familiar with the process.

One of the most significant benefits of this Committee having been formed is that the individuals directly below the Executive Committee level, in every area of the Hotel understand the process because they are actively involved with it. Management support of our process has greatly increased because of this and has prompted management personnel to request Teams at the manager level. Teams of this type are being included in future expansions. Communication and cooperation between departments have improved and there is a greater understanding of the work done by the various departments on the part of the Committee members and others who have assisted in the problem solving.

All in all, the Support Committee has accomplished what it was intended to do. Management is addressing problems that the Teams identify and are not allowed to solve themselves. There is confidence among Team Members that eventually their problems will be addressed by the Committee. The Committee has shown that the participative process will have involvement not only from the hourly employees but from management personnel as well. We anticipate that sometime in the future the Support Committee will be able to concentrate on problem prevention, rather than problem solving and we look forward to this transformation taking place.

CONCLUSION TO THIS PAPER

The utilization of problem-solving Involvement Teams in hotels is a step in the right direction since, "The hospitality industry has an opportunity to reaffirm and revitalize its dedication to quality guest services by enabling its employees to identify, analyze and solve job related problems that hinder guest satisfaction and organizational success. The opportunity also exists to establish a mechanism for increasing employee and management satisfaction and success in a traditionally high turnover industry." (1)

The utilization of a multi-departmental, mid-management Support Committee that is designed to address the type of problems that are traditionally not addressed by supervisor-employee problem solving Teams appears to be an activity that could be carefully considered by hotels and other organizations.

-END-

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About the Authors

1. Judy King is the Manager of Quality Assurance for Nashville's Opryland Hotel, America's largest self-contained hotel/convention center which employs 1800 persons. Ms. King was promoted to her current position in January of 1985, after serving for six years as the Hotel's Employee Relations Coordinator. She successfully implemented an Involvement Team (Quality Assurance) process at the Hotel, and has nineteen Teams, including Teams of management personnel. Ms. King serves on the Board of Directors for the Central Tennessee Chapter of the International Association of Quality Circles.

Ms. King is a native Tennessean and a graduate of the University of Tennessee, where she majored in merchandising and marketing. In addition to her hotel experience, she has held positions in promotions and buying for Castner Knott department stores. In 1986, Ms. King was selected as one of the Top Ten Outstanding Young Women in Nashville by the Davidson County Business and Professional Women's Club. She is the wife of an attorney, the mother of two boys and is active in church work.

2. Price Gibson has conducted IAQC co-sponsored research into the implementation of Involvement Team processes in U.S. organizations and is the author of numerous experience based articles and papers published by the IAQC. Price has provided consultation and training services in implementing Team processes in the hospitality industry, city government, banking, manufacturing and service industries.

Price is the author of "Quality Circles: An Approach To Productivity Improvement" published by the Work in America Institute. He is an experienced practitioner of Quality Circles having started as an organizational Quality Circles Program Coordinator and now serves as a consultant. Price is a founding and current member of the Board of Directors of the International Association of Quality Circles, as well as the founder and past president of the IAQC Greater Cleveland Area Chapter (the second such chapter in the U.S.).

Price has corporate experience in personnel and training capacities as Corporate Manager of Human Resource Development in the metals industry; division Manager of Manpower Planning and development in the nuclear power and instrumentation industry; Organizational Development and Personnel Specialist in the aerospace industry; and Management and Supervisional Trainer in the rubber industry. He earned a degree in Business Administration from The Citadel and has conducted college courses and seminars on organizational behavior, industrial training and human resource utilization.

Price is the author of numerous experience-based articles and papers on Quality Circles and Involvement Teams, and lectures widely to many professional associations. Price is President of Price Gibson and Associates, Inc. Hudson Ohio management consulting firm specializing in human resource utilization through participative problem solving processes.

# # #

Mainstreaming Quality Circles into the Corporate Culture

Celeste Holmes
Community Mutual Blue Cross and Blue Shield

Introducing new employee management concepts like Quality Circles does not have to occur through holding traditional group meetings. When the company strongly and actively supports the philosophy, a new approach can be applied.

Information will be shared on how Community Mutual Blue Cross and Blue Shield used their Management Development training program to acquaint management with Quality Circles.

I. History

Quality Circles were first introduced to Hospital Care Corporation, a Blue Cross Plan based in Cincinnati, Ohio, and Ohio Medical Indemnity Mutual, Inc., a Blue Shield plan based in Worthington, Ohio in 1981. Quality Circles activity grew steadily until December, 1984 when the two companies were consolidated to become Community Mutual Blue Cross and Blue Shield, Ohio's largest Blue Cross and Blue Shield plan. The consolidation had a major impact on the work force. The organizational climate was tense due to the reorganization of senior management and various departments. A new chief executive officer was named, department structures changed, jobs were reassigned, and employees relocated. Morale, productivity and quality ultimately suffered.

II. Building Towards a Solid Structure

After a year of growing pains, Community Mutual established our corporate philosophy and its six guiding principles of management.

1. Urgency to Action
2. Quality
3. Emphasis on Results
4. Recognition of Achievement
5. Leadership
6. Entrepreneurial Spirit

All levels of management were required to sign copies of the document which displayed their support and commitment for Community Mutual's corporate philosophy.

III. Mainstreaming Quality Circles

The first step of the mainstreaming process had already begun. Employees adopted this new philosophy by setting department goals to implement change, expressing ideas, and new work strategies were being developed. Quality Circles were viewed as a way of carrying out the six guiding principles of management.

In June, 1986 the Training and Development department launched a 10 week Management Development program. The program was designed to educate our management on the current trends and practices of managing.

Prior to starting the program, we selected the session that could easily incorporate the Quality Circle presentation. We proceeded with the following steps to target our session:

Step 1: Targeted Topic

- a. We identified sessions that developed employee relations skills. (Transition from subject matter to Q.C.'s would be easier).
- b. Evaluated the objectives of each training session to insure continuity from one subject to the next.
- c. Selected session entitled, "Working with Employee Groups."

Step 2: Analyzed Mechanics of Training Session

- a. Is there participant and instructor interaction?
- b. Does participant learn new team building skills.
- c. How much time is allotted to convey message?

Step 3: Developed Program Proposal

- a. Defined training goals/objectives, developed outline, handouts, audio-visual aids.

Step 4: Submitted proposal to person heading the Management Development program for action.

One of our goals was for management to leave the session with a deeper understanding of Quality Circles and initiative to use Quality Circles to solve problems. To enhance the total experience for a participant we developed a 15 minute audiovisual slideshow entitled, "An Introduction to Quality Circles at Community Mutual Blue Cross and Blue Shield."

Following the presentation we divided the participants into 3-4 round table groups, designated a facilitator, provided a flip chart and asked each group to discuss and write down the disadvantages and advantages of working with employee groups like Q.C.'s. We also asked each participant to complete an evaluation of the session. Based upon both written and oral feedback from participants, our presentation accomplished the following:

- increased knowledge about the Q.C. concept
- managers recognized the benefits for his/her employees
- managers understand how employee groups can solve work problems
- some misconceptions about employee involvement teams were dispelled
- stimulated interest to start Q.C.'s
- displayed senior management's intent to act on the six guiding principles of management

IV. Conclusion

This model shows that introducing management to the Quality Circle concept did strengthen the acceptance of Quality Circles. When the program is presented as a viable management tool that can be used in areas such as problem solving, employee relations and training, managers are more apt to try Quality Circles or any type of employee work team.

Biography

Celeste M. Holmes is the Quality Circle Facilitator for the Training and Development Department of Community Mutual Blue Cross and Blue Shield. She has a bachelor's degree in industrial psychology from Ohio State University.

She is a member of the American Society for Training and Development, the International Association of Quality Circles and the Cincinnati Chapter of Quality Circles.

Ms. Holmes is a volunteer board trainer for the Management Assistance Service and also a volunteer for the Housing Opportunities Made Equal (HOME) program. She received the Volunteer Award for Dedication from the Cincinnati Community Chest in 1986.

Community Mutual is one of the nation's largest Blue Cross and Blue Shield Plans, serving more than two million subscribers in Ohio.

Making (J)IT Work

Frank F. Jacobs
Linda A. Ruddy

International Business Machines Corporation

ABSTRACT

How does a manufacturing organization take Just-in-Time (JIT), the most significant process tool since Quality Circles, and apply those concepts to obtain the desired results without duplicating the same efforts used in previously introduced programs? Easy...use the techniques of Quality Circles and Extended Group Process to implement JIT.

INTRODUCTION

The concept of a Just-in-Time manufacturing process is among the latest programs introduced to American industry to increase efficiency and productivity. However, for any business to realize the benefits of JIT, it's important for all managers and employees supporting a production process to both understand it and be able to practically implement it. The cost of yet another program can be prohibitive and, in some cases, the implementation of JIT may be perceived as merely the latest management "fad." Therefore, before the first step toward JIT implementation is taken, management must be prepared to devote a significant amount of "up-front" work to the study of how JIT can be tailored to fit a specific production environment and yet allow product schedules to be met.

JIT has proven itself in many different manufacturing environments by saving time and money, in addition to reducing costly inventories and inefficient production processes. By integrating all elements of the manufacturing process for the purpose of producing defect-free products at the lowest cost with the least amount of waste, JIT's applicability to the real world of manufacturing is evident. The resulting savings of Just-in-Time operations far exceed implementation costs. Yet, many manufacturing plants have ignored the JIT concept due to cost factors, implementation time, and the impact on production schedules. It is ironic that the very elements of production that can be improved by JIT are also the obstacles that can prevent its implementation.

In order to consider integrating JIT into a production environment, it may be helpful to reflect back for a moment on the initiation of quality circles in large numbers of American businesses. Enough similarities exist between JIT and quality improvement plans (circles) that a number of parallels can be drawn regarding their implementation. Defect-free quality levels, participative management, increased efficiency, and elimination of scrap have all been identified as goals of quality improvement programs within the industrial environment. These same goals also apply to Just-in-Time manufacturing. By the same token, similar obstacles, such as a short-term disruption to business-as-usual production schedules and processes, have made implementation of quality circles, as well as JIT, difficult in some environments.

Those industries that have successful quality improvement programs can make use of the principles of participative problem solving when looking at methods of implementing JIT. Obtaining commitments up front from management is key, as well as involving all employees who contribute to the production process. In order to accomplish this, education is extremely important in generating support for the techniques of Just-in-Time manufacturing. Since firmly established quality improvement programs tend to strengthen attitudes of cooperation and consensus, this same network of problem-solving groups can be used very effectively in the installation of JIT in manufacturing facilities. This paper will relate those elements of the quality circle philosophy to an implementation plan and illustrate the significance of each step in successfully converting to Just-in-Time manufacturing.

WHAT IS JIT?

For many years, American manufacturers have directed their efforts to improving machine speeds while basically ignoring the impact of slow cycle times and low inventory turnovers on production operations. As a result, the mass production process was often organized in such a manner as to move large orders slowly from one separate operation to the next, with delays normally occurring in between.

Manufacturing management and support organizations generally grouped similar pieces of production equipment together, which further reduced the product flow and added barriers between departments responsible for the different operations. A natural competitiveness and protection of one's own "turf" among the separate departments impeded communications and cooperation in moving products efficiently along the line.

Whenever products in various stages of assembly and test sit idle between operations for any length of time, the company incurs inventory costs and delays in customer delivery schedules. To compensate for this time-consuming rate of production, manufacturers have typically reacted by increasing finished stock and order sizes, which ultimately resulted in additional inventory volumes and even slower cycle times.

As an example of the absurdity of this process, consider for a moment a cost cutting effort that ends up generating greater expense than the money it saves. In many companies, the accounts payable department makes every effort to pay incoming invoices within ten or fifteen days in order to receive a two percent discount on parts that are then sent to the warehouse. These parts often sit in the warehouse for several months before being moved to the line. Then, they may sit for another month until they are used in the production process. And again, they are warehoused as finished goods for another several months, all at a cost of 25 to 40 percent of their value per year (this depends on the accounting system and if opportunity costs are considered).

The Just-in-Time system is designed to cure the problems of high (and costly) inventory, low turn rates, and slow production cycle time. Of course, to accomplish this task, a number of changes must be made to business-as-usual manufacturing. To improve cycle time, a "pull system" that, in essence, pulls parts, assemblies, or materials from the source to the first operation and then to each subsequent operation as needed, must be implemented. Inventory on the shop floor and cycle times are both reduced with this method. In addition, the layout of production equipment on the floor must be restructured in a line type format in order to make the pull system work. With this layout, product subassemblies and parts are run through each operation in sequence; or, in other words, the equipment layout now matches the order in which a product is produced from start to finish.

Improvements in inventory turns can only be made when parts are ordered on an as-needed basis, allowing the vendor to deliver the material directly to the shop floor. By ordering just what is required by manufacturing to match production line demands, the warehousing process of receiving, stocking, issuing, and inventory can be eliminated.

Last but not least, a key philosophy of JIT is, "Make what you are selling; don't try to sell what you make." This addresses the tendency of manufacturers to produce and stockpile finished goods without firm customer orders to fill. JIT works most efficiently when the amount produced matches the demand for that product. Reducing cycle times through the implementation of the pull system allows manufacturers to respond more quickly to customer demand changes. To simplify, the less time that is required to manufacture a product, the easier it is to then produce a greater variety of products because the complexity of production decreases dramatically as cycle times decrease. Hence, the manufacturer's flexibility and ability to diversify, if necessary, are greatly enhanced.

ORGANIZATION

Companies typically structure themselves in the shape of a pyramid with fewer levels of management at the top and increasing levels of management and support organizations at the middle and departmental levels. Sometimes the distance between top and lower management, plus a middle layer of support groups associated with manufacturing, including production control, manufacturing engineering, quality control, and administration, tend to create layers of bureaucracy and barriers to communications that prevent or impede change. While most of us may feel there are benefits to the typical pyramid, a flattening of this structure which leads to less layers of management and support groups in the middle would help reduce the obstacles to change and definitely improve the communications flow from top to bottom and back up again.

While the Just-in-Time system itself is not intended to reorganize the management structure within any company, the principles it embodies, such as greater employee involvement, improved communications among all groups and levels, and the elimination of unnecessary processes or waste, can lead to natural modifications in a business-as-usual management chain of command.

Most businesses include within their structure six major components that will all experience some impact from the conversion to a JIT-style of production. These components are manufacturing, engineering, sales, administration, finance, and quality (production control and purchasing are often located within one of the above groups). The roles these groups play in the overall operation of the business are all valuable; and therefore, their input to and involvement in the implementation of JIT are critical. By soliciting the involvement of everyone and not just manufacturing, the management team can also ensure that a stronger commitment to the success of JIT implementation exists throughout the entire organization.

EDUCATION

Once the decision is made within a corporation that JIT will be implemented to replace the established business-as-usual production process, top management must make a strong commitment to education. Deciding how and what to teach can make the difference between success and failure. Top management must assess how best to tailor the principles and concepts of JIT to their own unique operations, and then decide on the best method to convey that message to their employees. The same principles that apply to the process of initiating employee involvement groups, or quality circles, into American industry also apply to the introduction of JIT.

The first step is to educate everyone in the company to speak the same language and thereby communicate the same change. Whether one instructor or several are used in this in-house education effort, they should be experienced instructors who have a firm working knowledge of the subject. Arrangements should be made through the management team to schedule everyone for training, regardless of individual job responsibilities. Highly visible support and commitment from top management is important at this point in order to generate employee enthusiasm. Using a member of the company's top management staff to introduce classes is a good way to visibly demonstrate this support. The concept can also be sold very effectively by getting employees who have had some previous exposure to JIT take part in teaching classes and presenting positive examples.

The key point to be made here is that a thorough, well organized education program is essential in order to make any dramatic changes within established companies. Unless everyone, including top management, understands the theory behind JIT; including its difference from business-as-usual production; the impact on various processes, particularly manufacturing and production control; and the expected gains; it will be almost impossible to integrate the necessary changes. As with all process improvement efforts made by quality circles, JIT's success depends on the establishment of goals and a consensus regarding the most effective methods of implementation.

JIT STEERING TEAM

As mentioned earlier, any Just-in-Time implementation effort must have top level management support and commitment from the start. As the old familiar golden rule of "he who has the gold makes the rules" applies to most modern corporate structures, the decision to modify traditional production processes is one that must come from the top. Unless top management makes a firm commitment and then clearly communicates that decision throughout the corporation, the effort to implement JIT becomes as ineffective and fruitless as a paper tiger blowing away in the economic winds. JIT is not a concept that can take root at the bottom and "bubble up" to the top because too many functions within most corporations are impacted by such a dramatic change. For these reasons, the establishment of an implementation team (or steering committee) headed by a representative of top management is essential.

A number of comparisons can be drawn between the initial planning stages of JIT and a quality circle program. Both require up-front commitment and involvement of top management, a well-thought-out education program, and a planning and implementation organization to set up the ground rules for integration within the company. And as with any change, the reasons for implementation, objectives, and expected benefits to be derived from JIT, like those of quality circles, must be agreed upon and communicated to all employees.

In determining the composition of the steering committee, care should be taken to select people with the credibility and "people power" to make things happen. Involvement need not be a full-time task but can be integrated into the normal job responsibilities. The primary goals of the steering committee are to translate the concepts of JIT into concrete plans for the restructuring of the production process, convey top management's support, and help functional and department JIT implementation groups cross the walls or barriers that exist between organizations in order to accomplish what must be done.

FUNCTIONAL TEAMS

Functional teams composed of representatives from middle and line management should be set up to develop specific action plans based on the objectives of top management and the steering committee. Since these team members are closer to the various manufacturing, engineering, and support operations, they can tailor changes within their areas of responsibility to fit the company's goals. In addition, functional teams are in the position of acting as a vital communications link between the steering committee and the employees who will actually test the applicability of JIT in the manufacturing environment. They can pass information in both an upward and downward direction while maintaining some control over the progress and implementation.

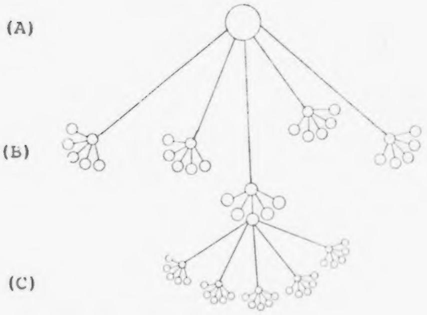
DEPARTMENTAL TEAMS

If all previous steps have been successfully completed, particularly the education process, departmental teams should form naturally in the various areas where JIT is to be introduced. For those corporations that have actively encouraged the formation of quality circles, a structure of small departmental teams already exists. For those that don't, this is an ideal time to put the philosophy of quality circles to work by establishing small teams that promote employee participation, problem resolution through consensus and goal setting, improved product and process quality, and improved teamwork and communications. With strong management support behind them, these teams can achieve considerable success in putting the new processes to work.

Because the members of these departmental teams will be involved in the actual transition from business-as-usual production to JIT, they will most probably be the people who will first experience and identify problems. In fact, if good communication exists among the departmental, functional, and steering teams, a tremendous amount of valuable information about the applicability of JIT to specific operations will bubble up. These problems need to be recognized and dealt with immediately. It's therefore critical that a system for reporting, tracking, and resolving problems be designed that is clearly understood by everyone. A key factor to the success of JIT implementation is the responsiveness of management in solving problems and working closely with employees to ensure that proper corrective action is taken. This subject is one that will be dealt with in more detail later in the presentation.

One word of caution should be interjected at this point. Departmental teams can only achieve success if the members feel their enthusiasm and commitment to their objectives are shared by company management. How many times have you witnessed a program start-up that has generated a great deal of interest initially but soon fizzled out due to lack of sound management support and direction? JIT will take time to implement. Therefore, the entire process requires both patience and continual internal communication from top to bottom to ensure that the objectives are met and the employees feel they are contributing to a positive change for the business.

OVERALL STRUCTURE



(A) Steering Committee:
Principles and Concepts
(B) Functional Teams:
Area Goals and Communication
(C) Department Teams:
Plans for Implementation, Problem Tracking/Reporting, Ongoing Improvements

FEEDBACK, FEED FORWARD, TIMING

As we have discussed earlier in the presentation, the early stages of Just-in-Time implementation will generally involve a great deal of information being fed forward from top management to the steering committee and on down. This information should consist primarily of how a JIT-structured production operation will fit within the company's existing principles and concepts. Each corporation or business is unique; therefore, its management must decide on the best method to integrate those elements of Just-in-Time manufacturing within its already established internal operations with the least amount of cost, schedule delays, and trauma to its personnel. Frequent and enthusiastic communications, both verbal and written, from top management will help maintain a high level of interest in JIT and reinforce its commitment to improvement.

Once the functional and departmental teams begin to take action, the flow of information will most likely be reversed as both problems and progress are reported upward. Again, it's extremely important that communications channels be kept open so feedback from the departmental teams can rise to the functional and steering teams. This input is the only effective means company management has to assess the positives and negatives associated with JIT implementation. Management can then determine what steps need to be taken to make the transition between old and new operations come about more smoothly.

The steering committee should meet frequently, especially during the front end of implementation, to define their roll, lay the groundwork for the upward and downward communications channels, and establish action plans for implementation based on the company's environment and objectives. Once these are in place, the functional teams and finally departmental teams should begin to start applying the steering committee's plans to actual manufacturing operations. We suggest that as implementation activity gears up, the steering committee should meet once a month, the functional teams twice a month, and the departmental teams weekly to promote coordination, cooperation, and as smooth a transition as possible without undue delays.

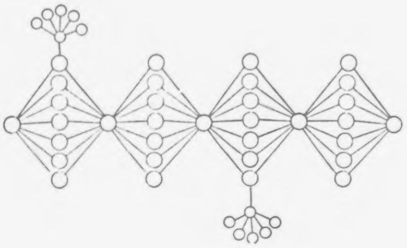
The departmental teams at this point should function like quality circles in that they are responsible for identifying problems, brainstorming solutions, and, with the help of the functional teams, working to satisfactorily resolve these problems. If the departmental teams adapt the various tools and techniques taught to quality circles, such as the use of a planned agenda, team facilitator and recorder, establishment of measurements, equal participation, and up-front agreement on how decisions will be made, their chances of success become much greater.

CROSSING THE WALLS

Many changes taking place as the result of the conversion to JIT will require cooperation and communication among organizations outside individual department "walls." In such circumstances, teams must develop ways to cross over the walls and work with others to obtain the involvement, information, or cooperation they need. One suggestion for eliminating problems with people who are uncooperative simply because they work in another department is to establish implementation teams similar to quality circles that involve representatives from several departments. These teams can supplement departmental teams because they have been set up strictly to solve specific problems that affect more than one area.

This "Extended Group Process" problem-solving technique has the capability to break down barriers, get together as required to focus on one (or a set of) specific problem(s), examine alternatives, agree on a solution, and then disband when their task is accomplished. Such a team differs from a quality circle only in the length of its existence.

Use of resources in this manner has proven itself in quality circle programs within industry and is structured like this:



COMMUNICATION

In essence, a very effective sales program must be designed by the corporate level management of any company desiring to make the major changes necessary to convert to JIT. No doubt some resistance will be encountered because human beings typically view change skeptically. To counteract this apprehension, top management must avoid a superficial "bells and whistles" promotional campaign that starts off strong but because it lacks substance, fizzles soon thereafter. Messages from the very top that convey management's commitment need to be communicated sincerely and clearly to everyone in the company. The reasons for conversion must be defined so that the benefits to both the company and its personnel are evident.

Vehicles for such communications can vary, including bulletin board announcements, a special JIT newsletter, and periodic articles highlighting progress in existing company publications. Whatever method is selected must demonstrate management's desire to generate a serious exchange of information from top to bottom. Once a choice is made, stick with the format and make the most effective use of it. Focus on achievements. Recognize people who are responsible for helping to make JIT an improved way of life within the manufacturing process. Encourage others to become involved by joining a departmental or extended group process team so their ideas can be utilized. Company publications can be used as educational materials for those employees who are not directly involved in areas where JIT is being implemented. Through articles that outline the various process changes contributing to JIT conversion, readers can develop a greater appreciation of the productivity gains possible. They can also see the benefits to be gained from a network of small problem solving groups all working toward common goals.

TEAM AIDS

Just-in-Time manufacturing techniques were developed primarily to eliminate waste in a number of areas within the business. To help keep teams on track in identifying and reporting problems, a "Waste List" memo pad can be used to increase employee awareness of those elements that do not contribute any value add to the manufacturing process. A "waste list" will help employees record problems they see and provide them with documentation that can be turned over to the appropriate person or area responsible for resolution. During departmental problem-solving team meetings, "waste lists" can be reviewed and discussed by all participants for the purpose of generating ideas to eliminate the waste.

Much of the quality circle philosophy, tools, and techniques that have been studied and, in some cases, adopted within corporate structures can be used to help departmental and functional teams, steering committees, and extended group process teams find solutions to problems. Employee participation and participatory management are the cornerstones of all quality circle programs. Consensus decision making through a step-by-step process of defining, analyzing, and then resolving problems is key to the quality circle philosophy. But it is obviously an important technique that should be applied to JIT implementation teams at all levels. Those companies that have already realized the progress and benefits to be gained from quality circles are a step ahead of other companies when setting up their JIT implementation organization.

REPORTING PROBLEMS/OPPORTUNITIES

The problems and opportunities encountered by integrating JIT into business-as-usual manufacturing operations require immediate action in order to maintain integrity and demonstrate management's commitment to make it happen. If problems are allowed to be "swept under the rug" and are not given the necessary attention, employees will begin to lose enthusiasm and belief in their management team. This can do more damage to a program than any implementation costs or schedule delays.

Employees must be provided with a method of reporting problems that is not intimidating to them. They must feel comfortable enough with the communications channels open to them that they can escalate their concerns to the appropriate level of management. Open communication, like participatory management, encourages a free exchange of ideas and information in both an upward and downward direction.

We suggest that a formal problem reporting and tracking system be put in place and used by all employees and managers for the purpose of correcting JIT transition problems as they occur. As an example, let's look at a possible reporting arrangement that we've called a "Step Up" program. If a problem surfaces that the employee cannot solve, he or she should first discuss it with the responsible manager or departmental problem-solving team. If the problem has not been resolved after a reasonable (previously established) amount of time, the employee is expected to step up to the next level of management with his or her concerns. Finally, if no corrective action has been taken after another previously established amount of time, the employee is obligated to report his or her findings to the appropriate functional team or functional manager for resolution. If this system is incorporated into normal business operations and used in a productive, non-threatening manner, the right environment will exist for employees and managers to cooperate with each other and solve problems.

It's unrealistic to think that such major changes to traditional production operations would not result in some major (and minor) problems. That's to be expected. But by accepting that reality, corporations intent upon implementing JIT must be prepared to deal with setbacks from a position of collective strength. Employees and management must share the responsibility for the success or failure of their efforts by working together and communicating openly and effectively.

CONCLUSION

American industry has, up until the last decade, always assumed a leadership role among the nations of the world in production, quality, and innovation. However, current economic conditions indicate that in this extremely competitive environment, the U.S. has fallen behind other countries. We're discovering that our traditional manufacturing processes are not as efficient and cost-effective as they need to be in order to maintain a strong position in the marketplace. Just-in-Time manufacturing presents American management with the opportunity to critically assess its operations and incorporate new techniques that shorten cycle times, increase inventory turns, and develop the flexibility necessary to become more responsive to changing customer requirements.

Alterations to well-established organizational philosophies, cultures, and structures are frequently difficult to implement and, in some cases, unsuccessful. Nevertheless, change is not impossible if approached in a well-organized, carefully planned manner. By incorporating many of the same elements that comprise a quality circle program, including training, top management support, a participatory management style, open communications channels, and active employee involvement in problem solving, the chances of successfully converting old production processes to new increase significantly. Such a task will require a high degree of cooperation that transcends departmental barriers. By using a team problem-solving concept similar to quality circles, this cooperative attitude will evolve naturally.

Finally, keep in mind the philosophy that nothing succeeds like success. Focus on accomplishments and recognize people for their efforts. A Just-in-Time manufacturing system offers many benefits to individual employees as well as corporations by increasing the degree of responsibility and ownership of all involved in the process. Employees are given the opportunity through JIT to help make decisions regarding product flow which directly affect quality and efficiency. Their contributions, along with the commitment of supportive management and implementation teams, will ensure the successful transition to a new and innovative way of doing business for American manufacturers.

AUTHOR

Frank F. Jacobs joined IBM in 1964 as a production worker on the 1400 system card production line in the Endicott, NY manufacturing facility. Since then, he has worked as a maintenance technician, engineer, manager in several areas, and is now a staff instructor in the "Just-in-Time" manufacturing process at IBM Charlotte, NC. Mr. Jacobs has attended two junior colleges and has more than 6,000 hours of industrial training in subjects as diverse as machine repair and transactional analysis.

AUTHOR

During her 13 years with IBM, Linda A. Ruddy has worked at both the Endicott, NY and Charlotte, NC facilities in a number of capacities, ranging from employee communications/publications to administrative management. She currently is the coordinator of an Excellence/Quality Circles Program within the Charlotte site. At the present time, Ms. Ruddy is completing her Bachelor of Science degree in Communications from Queens College in Charlotte, NC, and has previously attended George Washington University in Washington, D.C. and the State University of New York at Binghamton.

Middle Management: Formula for Commitment

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Over the last few years Red River Army Depot has developed one of the largest and most successful Quality Circle programs in the Depot Systems Command (DESCOM). We also had a very large problem; middle management did not really support the program and, in some instances, even undermined our efforts. But why? We felt that their lack of support was directly attributable to a lack of understanding of the program. This paper details a training strategy we used to help managers understand what teams and managers could do to support each others efforts. Results were phenomenal!

Background. Red River Army Depot, which is located in Northeast Texas, is the Army's largest depot, employing some 6,000 civilian and military personnel. Its three-fold mission is to provide depot-level support in the areas of maintenance, supply, and ammunition. Red River is known as "the carrier capital of the free world" because of its work on the M113 armored personnel carrier; however, its primary focus will soon shift to the maintenance, repair, and overhaul of such advanced systems as the Bradley Fighting Vehicle and the Multiple Launch Rocket System. The Quality Circle concept is not a new one at Red River. The first circles began here in 1980 with eight pilot circles. Over the past two years, we have enjoyed phenomenal growth from 26 circles in 1984 to 115 circles at the end of fiscal year 1985. This effort involves about 1,000 employees. Yet as in many other organizations, there was a vital ingredient missing in our success story.

Problem. Our missing ingredient was support from middle management. But was this support important? And how did this lack of support manifest itself? We observed many symptoms of the problem and expended a great deal of our limited resources in administering "band-aid cures" throughout the organization. But as our program expanded, these symptoms grew proportionally in number and began to threaten the very survival of the circle efforts. Two important symptoms and our attempts to 'cure' them are lessons in experience.

First, in many instances middle managers would approve a circle's proposed solution following their management presentation, but they would then give implementation a low priority, thereby virtually ensuring the solution would not be implemented. Or, at times, they would implement their own version of the solution without consulting the circle. Both of these situations caused a great deal of frustration, distrust of management, distortion on solutions, and removed pride of 'ownership' from the circle. We attempted to correct this by requiring a comprehensive monthly report to the steering committee showing the status of implementation for each project. This report quickly became unwieldy, unmanageable, and without impact--a real nightmare.

A second example of the symptoms of mid-management's non-support was first-line supervisors' resistance to becoming involved. They resisted attending meetings, lending assistance, and especially leading circles. Some actually believed in the program, but were reluctant to align themselves with an unpopular program. To counteract this problem, the steering committee attempted to encourage involvement by strongly encouraging first-line supervisors to lead circles; in some areas, this policy was made mandatory. Unfortunately, we had once again by-passed the bulk of mid-management and circle leadership remained a low prestige position. Therefore, this effort met with very limited success.

These actions by the steering committee to correct the deficiencies sound commendable, and they were; however, the real power of the steering committee was derived from its chairman, the Depot Commander. Many of the senior managers who made up the membership of the committee were passive, marking time until a new commander arrived on the scene. Since a depot commander's tenure is only about two years, change is pretty predictable. We were aware that the present leadership alone could not change the system permanently unless there was a change in the organizational culture. A strong steering committee and strong support at senior management level can do more toward changing the management culture in private industry and in smaller organizations where their tenure is more stable than in large, bureaucratic organizations such as ours.

Causes of the Problem. As we began to analyze our problem, one question constantly recurred: "How could otherwise intelligent, well-qualified managers not support the quality circle concept?" It appeared obvious to us that anyone who fully understood the concept would see the potential benefits to their organization. Suddenly we realized that we had answered our own question. They did not understand it. In our zeal to implement the process, we had neglected to fully educate and inform one of the most vital elements of our organization. Managers did not understand the concept, process, and techniques used by circles nor did they understand their own role in the process. Instead they felt alienated, threatened, undermined, and even guilty. Since noone can effectively support what they don't understand, how could they be supportive? And how could we recover from such a monumental oversight?

Solution. If a lack of understanding was, indeed, our primary problem, then training seemed to be the obvious solution. But of all the myriad of information available on quality circles, what should we teach? And to whom?

The 'whom' of our question proved to be the easier of the two to answer. With the Depot Commander's blessing, we made plans to train all middle managers which we defined as all branch chiefs through first-line supervisors--some 480 personnel in all- in a series of twenty full--day sessions.

The 'what' to train proved a more difficult question to answer. Quickly deciding the managers had been subjected to enough theory on participative management, in general, and quality circles, in particular, we began to concentrate on specifics. Given an extremely limited timeframe, what did they really need to know in order to interact confidently and effectively with their circles? From this a goal developed to give them a working knowledge of their role in the quality circle process. And so with that goal firmly in mind, we prepared our agenda.

To reinforce the importance of this training, we asked the Depot Commander to begin each session with a short talk in which he reiterated his strong support for and belief in the process. He readily agreed and his personal message to the managers set the tone for the rest of the day.

The first actual session on the agenda was entitled "Mid-Management: The Missing Link," a term we coined from George Mugno's article in 1985 IAQC Transactions. During this segment, we discussed frankly some of the mistakes we had made in implementing the process--chief among them our failure to inform and involve middle management from the outset. We divided our discussion into three parts. First, we talked about how this problem had come about and took responsibility for much of the oversight. This mea culpa proved singularly disarming for those who had come ready to unload their frustrations with the process and released much of the tension. This enabled us to move more easily to the heart of the session. Second, we discussed how circles could actually benefit middle managers. Here we highlighted advantages such as the increased sense of ownership and loyalty members frequently felt for their organization, the chance for improved communications between workers and supervisors, and the time supervisors might gain by having circles help solve work-related problems. Finally, we addressed some techniques managers could use to make their circles more effective. This last segment prepared the participants for the rest of our instruction.

Our next segment focused on the rights and responsibilities of management with regard to quality circles, as well as the members' rights and responsibilities. Using ideas gleaned from a variety of sources, we attempted to establish some guidelines for the management/circle relationship. Although this segment frequently generated the day's most heated discussions, most managers were surprised to find that they had rights and frankly relieved to have some ground rules established.

The balance of the day was devoted to familiarizing the participants with the problem-solving process used by their circles. We strongly emphasized that this part of the course was designed to help managers speak the language, not make them experts in the process; however, we felt that many managers avoided interaction with their circles because they lacked this common 'language' and were reluctant to place themselves in situations in which they felt like the odd-man out. In this phase, we took them step-by-step through our process, focusing on two key points: (1) What the circles should be doing, and (2) What the managers could do at each step to enhance their circles' activities. For example, we explained that during the problem identification step, the circle would be using such techniques as brainstorming to identify a list of possible problems to be addressed by the circle. For the managers, we recommended that they review the list, cautioning them that quantity rather than quality of suggestions was more important at this point, and offer any additional problems they would like to see the circle consider. To reinforce our instruction, we provided each participant with a handout which detailed these points for future reference.

The last half hour was devoted to a look at various forms used by quality circles (i.e., minutes, code of conduct,project reports, etc.). During this time we explained how each form could provide the manager with valuable information about their circle's activities and how they might be used as a diagnostic tool. Then, using information collected from a variety of sources--circle members, managers, and various publications, we offered a list of tips managers might use in maximizing involvement with their circles.

Benefits. At the conclusion of each session, we asked the managers to complete an unsigned questionnaire evaluating the benefit of circles to the depot. The statistics showed that 87% of the managers now believed that quality circles would benefit their organization. More importantly, 43% expressed an interest in becoming a circle member. This figure does not reflect the number who were already involved prior to training.

Even more gratifying than these figures have been the visible results of our efforts. Many managers returned to their work areas and began at once to become involved with their circles, supporting circle efforts and enlisting their aid in solving work-related problems. Over the months other efforts initiated by the managers themselves have increased overall participation. For instance, directorate and division -level steering committees are springing up across the depot and one division has begun to have quality circle rallies to publicize their circles' activities.

Having first prepared the circles to welcome and encourage their managers' first, and often tentative, overtures, the two sides are now coming together. Slowly we see a new atmosphere of trust and mutual support evolving. The results of a recent depot-wide survey conducted six months after training showed a marked improvement over the previous year's survey. According to the survey, 85% of the circles surveyed felt that managers were supportive of their efforts versus less than 40% prior to training. Existing circles are becoming more successful and new circles are springing up in previously unthought of areas, including white collar and supervisory circles. In the first three months following the conclusion of training, our total number of circles increased from 123 to 151. That means that 23% of our entire work force is now actively involved in identifying and solving problems.

Conclusion. Our solution is not perfect--nothing is perfect. What we sought to effect was a culture change. We realized that in order for quality circles to thrive--or even survive-- they could not be dependent on any one individual, no matter how powerful or charismatic. Rather they had to become a part of the organizational fabric, an accepted way of doing business, not an aberration. And where there is change there will always be resistance. But those who resist are now fewer in number and more isolated; and there are more supporters to help 'sell' them. We believe this training, combined with continued emphasis from all levels of management, as well as positive results from the circles themselves was a major step in effecting this change, and we are very happy with our success. At last managers and circles are realizing that ours is a symbiotic relationship in which neither side can truly flourish without the other. But together we work magic!

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Biographies

Nancy G. Jones, Captain, U.S. Army, is Assistant Chief of Depot Shops Division at Red River Army Depot. Her duties include coordinating the division's 45 circles and she served as primary instructor for this management training program. CPT Jones graduated (magna cum laude) from North Carolina State University with BA in English and is presently pursuing a Master's degree in Education.

Jean Rhodes has served as the Program Manager of Red River Army Depot's Quality Circle program during a time of phenomenal growth--from 14 to 150 circles. She has many years experience in adminstration and management in industrial shop settings, both in the public and private sector. She retired from federal service in 1986 and presently consults to managers on the development and enhancement of participative management programs. Her responsibilities have included planning for organizational change, counseling, facilitating and training to develop and enhance Quality Circles and a variety of problem solving team efforts.

Organization Support: How to Get Organization Support or Convincing the Person with Four Aces to Ask for a New Deal

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The presentation will focus on four key ways to get visible organization support for Quality Circles and will provide hands-on processes to make them work:

1. **Rewarding Quality Circles with the organization's suggestion program**
2. **Recognizing Quality Circles with an annual corporatewide competition and banquet hosted by senior management**
3. **Integrating Quality Circles with existing corporate programs: quarterly bank magazine, branch service promotional programs**
4. **Developing variations of the Quality Circle process to meet changing business environments: Quality Forums and Special Task Teams**

The first step toward building organization support is to build understanding around the meaning of support. This common concept tends to have very little meaning due to overuse. An excellent activity to use with your management team was developed by John R. Schermerhorn Jr., and published in the November 1986 Training and Development Journal.

- Begin by asking managers "What prevents your employees from performing at their highest level?"
- Specify that managers are to select one of these causes: lack of skill, lack of ability or lack of support.
- Ask for a show of hands for each cause and record the responses. (Most will respond ability or effort).
- Now ask managers, "What prevents you from performing at your highest level?" (Most respond support).

The answers to this exercise are so obvious as to seem too simple but this activity clearly shows managers the importance of support.

At Bank of America support is supplied through a small central department, consisting of a staff of three. This department is responsible for training, consulting and coordinating circles. We also constantly gather support by promoting and marketing circles through rewards, recognition, integration and development of variations on the circle process.

We developed a management support video that directly addresses concerns managers have about starting circles. The video is a part of our Management Overview Workshop that introduces management teams to the Quality Circle concept. By identifying management resistance to circles, we're able to get managers to look realistically at their own level of support.

Rewarding through the suggestion program

It is not a common practice of most organizations to reward circle efforts with money, however; at Bank of America, Quality Circles are eligible for monetary rewards through the employee suggestion system, Ideas In Action. Circles submit their ideas on a form specially designed for circles which requires management sign-off on implementation of the idea. Involving management in the process accomplishes several things:

- speeds up the process of evaluation because the new idea is already implemented
- enables the circle to assist in the implementation and see results immediately
- rewards the circle as a team

Circle projects that meet all eligibility rules and have been implemented can receive monetary awards based on the dollars saved through the implementation of a project or on the service quality improvement made as a result of a project. Circles have the option to split the amount of the award or for small awards to use the money for a circle event.

Caution:

> Care must be taken not to over emphasize monetary awards. A monetary award for a circle's project provides recognition of the circle's results, as long as the award is not the key reason for participating in the circle. Circles need to be flexible to solve either local or large problems. We have seen examples of circles selecting big dollar problems that took years to solve and resulted in circle failure because sustaining interest becomes difficult over a long period of time.

Recognizing Quality Circles through Annual Competition

Another method used to help build support and sustain circles is a corporatewide Quality Circle Competition in which circles submit their completed projects for judging by a panel of executives, selected from major divisions throughout the corporation. Projects are rated on a sliding scale of 1 to 7 in the following categories:

- effect on accuracy, error reduction
- effect on timeliness of service
- effect on courtesy to customers
- effect on other aspects of service quality i.e. availability, knowledge base, etc.
- percentage of employees affected
- percentage of customer base affected
- direct dollar benefits achieved
- effective usage of problem solving techniques
- overall presentation

Three top circle performers are awarded, first, second and third places and invited to attend a luncheon where senior executives present awards and speak about the importance of quality. This occasion is a truly festive event marked by a multi-image show celebrating each winning circle; project displays; and appearances from bank and department heads.

Upon entering the competition, circle members receive letters of congratulations and a small gift to mark their participation. This is a way of rewarding completion of their project and team effort. The competition also provides employees and senior executives the opportunity to interact and exchange ideas.

Integrating Quality Circles with existing corporate programs

Keeping circles visible in the corporation is essential to the survival of the program. That means actively writing and calling corporatewide publications with information about Quality Circles and submitting suggestions for stories about the program.

At Bank of America, the major quarterly publication, the BankAmerican, carries a Quality Circle project story in each issue. The feature story highlights a circle's solution, briefly explaining the original problem and the steps the circle followed to create a solution. Circle projects are also highlighted in the monthly employee benefits newsletter.

In the past, Quality Circles boasted its own quarterly publication, The Quality Circle NewsNetwork. This newsletter was devoted strictly to describing problems, solutions and bottom line results of circles at the Bank. It was designed to facilitate the exchange of ideas so that all circles could benefit from each other. The publication was recently eliminated in a bankwide sweep of local and departmental newsletters.

Other resources for dispersing information about circles are promotional service quality improvement programs. Several of these short-term programs include local unit or division publications, contests, and sometimes videos. Our strategy has been to attempt to support promotional themes through circle projects and, as a result, get circles in the news again.

Developing variations on the Quality Circle Process: Quality Forums, Special Task Teams

Quality Circles solve problems. We sell that idea to managers and allow them to suggest adaptations that suit their units. In other words, the core programs for enlisting employees into the problem-solving process is Quality Circles, but the problem solving model is applicable in many different situations. Applying the problem solving model can suddenly make decision making a rational process and this again builds support for the program.

One adaptation to circles is a Quality Forum, a method devised by facilitator, Charlene Lynch. A Quality Forum is group that meets regularly for an agreed upon numbers of meetings. In our example, six Customer Service Representatives met three times to identify ways to improve the quality of service at Teleservicing. CSRs were taught circle techniques:

- brainstorming
- cause and effect diagrams
- checksheets.

Techniques were taught only as they were needed and applied to a specific problem. As membership in the Quality Forum changed, larger and larger numbers of employees in the unit have developed problem solving skills. With this skill foundation, a more traditional Quality Circle can easily be formed to solve the more complex problems in the work unit.

We are also constantly looking at ways to streamline the training program for new circles. Circles train on real problems and learn techniques as needed, not prior to beginning the problem solving process. We are on the look out for any techniques that meet specific unit needs and can be incorporated into unit-specific Quality Circle training.

Another adaptation of circles is the "task force" with entire management teams or departments trained in the techniques in order to use the problem solving model during staff meetings. This is effective when a department is undergoing changes and needs a team effort to facilitate those changes.

Conclusion

Our reasoning is that circle techniques are of value to the organization because they can be used to actively address problems and create solutions. Circles are a corporate resource, a way to build quality into products and processes. Although circles have no authoritative power inside the organization, they are a powerful influence on change.

Bank of America sustains support for its circle program by rewarding, recognizing, integrating and developing circles on an ongoing basis. This tends to build a closer, more cooperative relationship between circles and managers. When circles solve work-related problems, they become aces to managers. The truth is, circles can produce winning hands.

Biographical Information

Joan M. Kaplan is the manager of the Quality Circle Support units. Joan was on the team that initiated circles at Bank of America in 1980. She spearheaded the training effort and managed the training support function for circles. Joan initiated both the bank's semi-annual facilitator's update seminars and the ongoing development of advanced training materials. After a two-year hiatus, she is again involved with circles as manager of the bank's Quality Circle Unit. Joan has a M. S. from the University of Bridgeport, Connecticut and a B. S. from Pennsylvania State University.

Anita D. Hara is a Senior Consultant on the Quality Circle Support team. Anita is responsible for developing and producing support materials for use in QC training programs. She also delivers the Management Overview Workshop which she recently redesigned. She holds an MEd. in Instructional Media from Arizona State University.

Hand in Hand - Expanding Your Employee Involvement While Increasing Management Support

Mary Lou Moore and Kay Wentworth
Intel Corporation, Chandler Microcomponents Division, Chandler, Arizona

BACKGROUND

Intel Corporation is a California based semi-conductor company which makes highly integrated microcomputer "chips" such as microprocessors, microcontrollers and EPROMS as well as systems.

Intel employs approximately 20,000 people world wide.

Circles in the Chandler Microcomponents Division were started in September of 1980. Circles at Intel have always been a "bottom-up" philosophy. Prior to that date, employee involvement was found only at the technical and exempt levels in the form of Task Forces, Committees/Councils and GYATT's. (Get Your Act Together product start up meetings). They were in place to solve specific problems, address on-going cross site issues, and to disseminate information.

At our location, five groups were introduced into the circle problem solving process. Most of these circles were and continue to be geared toward the hourly production employees.

After more than five years of sustaining our generic circle program, it became apparent that we had left out an integral portion of the population that could and should drive the success of the process......Management.

Circles certainly would not have existed without support from a few key members of management but for all practical purposes it was facilitator owned. Management ownership was never inherent in the process.

Our research, proved that when we initially started with the virginal circle program; we trained our managers and then told them "hands-off". You can imagine after employee turn over, attrition, and layoffs over a five year period that training was lost in the shuffle. Managers, even though they received minutes, approved projects and attended management presentations still had no real concept of what the group was working on for perhaps two months. A lack of training, communication and commitment were missing in our division.

There were several ups and downs during the five year period. The word "circles" held a negative connotation in some cases for both managers and members based on experiences and perceptions.

In addition, in a very highly technical and rapidly changing environment, the circle process and long term projects did not always meet our needs. Circles would often implement a solution and within six months the process/equipment would change. This left members of circles, as well as their respective managers, questioning the real worth of circles. Highly technical mainstream projects could not always be tackled quickly enough because support from management in enlisting content specialists did not occur until the problem became critical and a solution was not in place.

A Circles Management Workshop was conducted in May of 1985 to provide retraining and a forum for discussion. That truly was our initial step. It had become apparent that we had unrealistic expectations and lacked understanding of the real tangible actions that are necessary for a successful circle process.

PREPARING YOUR ORGANIZATION: STEPS TOWARD CHANGE

The following steps were taken to prepare our organization for change and expand our employee involvement program.

1) Management Workshop - (as previously stated) retraining and an opportunity for discussion.

2) Research: We looked for environments similar to our own (rapid moving, technical, circles or some type of EI in place) and requested information on their process and structure.

3) Person to person and phone interviews were held with representatives from four companies presently participating in some form of EI.

4) Consistent meetings with the Manufacturing Manager discussing expansion and laying the groundwork for increased EI.

5) Two presentations were given to the Site Steering Committee members from representatives from two major companies with long term EI commitments and structures that expanded beyond Quality Circles.

6) Routed articles monthly to leaders, managers, and Steering Committee members that described methods/environments that expanded the EI concept.

7) Developed a presentation/proposal for our Site Steering Committee. The proposal was tweaked by a member that needed to be its chief proponent.

8) Presented the proposal/presentation to the Steering Committee. (It was accepted and approved with no changes!)

These steps took approximately nine months, but that time spent "planting the seeds" was crucial. Almost every step of the way, Steering Committee members were saying "That's nice, but it won't work for us."

THE NEW STRUCTURE

The new structure for Employee Involvement in our CMD Division began Q1/86. It consisted of the following types of teams, each with different charters, core membership, meeting frequency, and voluntary/involuntary status:

1) Intel Circles

2) Problem Solving Teams

3) Task Forces

4) Manufacturing Specialist Teams

5) Department Staff Teams

6) Manufacturing/Graphics Direct Report Teams

7) Site Steering Committee

Members of management were involved in their own teams and reviewed/addressed projects and problems applicable to their level. This was done through project buy-off and feedback logs that were filtered up from Circles, Problem Solving Teams and Task Forces to the appropriate Department Staff Team. (See below) At each level, if problems required additional support for resolutions or could not be resolved at that level, they were filtered to the next level. Feedback from these teams was to be reviewed at their respective meetings.

PROBLEM FEEDBACK LOG

CIRCLE/TEAM ____________ RESPONSIBLE MANAGER ____________
LEADER ____________ DEPARTMENT NO. ____________

PROBLEM	DATE IDENTIFIED	SPECIFIC ACTION REQUIRED	DUE DATE	STATUS

PROBLEM BUY-OFF LOG

CIRCLE/TEAM ____________ RESPONSIBLE MANAGER ____________
LEADER ____________ DEPARTMENT NO. ____________

PROBLEM	DATE I.D.	CIRCLE	SPECIFIC ACTION REQUIRED	DUE DATE	STATUS

In addition circle or project leaders were required to give a status report at each meeting. These reports consist of a current project status, any problems being encountered, and a review of their project gantt chart.

The fundamental rule which we learned from the Honeywell Chandler experience was to implement this concept in areas that were not highly matrixed. The more central and top down focus you have, the better. Highly matrixed environments, such as many of our product/engineering groups make it difficult for this system to work. (Too many chiefs pulling the Indians in different directions, is disastrous).

VICTORIES AND PROBLEMS WE'VE ENCOUNTERED

Victories

1) Improved communications, responsibility and ownership at immediate and mid management levels.

2) Visibility

3) Increased support in providing/assigning content specialists to help teams resolve problems. This gives teams more content knowledge as well as facilitating quicker completion of projects.

4) Opportunity for additional employee participation without becoming a circle member.

5) Dissolution of teams if problems are resolved.

6) Improved project tracking and an increased push to improve performance against schedule.

Problems

1) The feedback/review system is a difficult habit to instill. It has taken a year and still requires monitoring.

2) EI is overall management owned but facilitators still act as the catalyst to ensure the process continues.

3) Reorganizations, layoffs, training, etc. require constant rebuilding of the concepts.

WHERE DO WE GO FROM HERE?

Obviously we have to address the problems previously stated. In addition we are currently laying the groundwork in Manufacturing for more mandatory EI with a Problem Solving Team approach. We have employees, that in our increasingly technical environment, are having their job descriptions and responsibilities constantly changed. They are expected to solve problems, but lack training in the problem solving methods. If our division is to mature and become the engineering production environment it proposes, "systematic" problem solving needs to be a way of life and a part of the job.

BIOGRAPHICAL INFORMATION

Mary Lou Moore, is the Facilitator for Arizona Site Intel Circles. Her background encompasses a B.S. in Business Administration with a minor in Training and Development. She spent twelve years prior to her graduation from Grand Canyon College in the food service industry. Mary Lou joined Intel in 1982. She worked as a Production Trainer and Employee Relations Specialist before assuming her current position as both Arizona Site Facilitator and Chandler Microcomputer Training Manager. Mary Lou is very active in the Valley of the Sun Chapter of the IAQC. As evidenced by her participation as Publicist in 1984-1985, and Chapter President in 1985-1986.

Kay Wentworth, is the Assistant Circle Facilitator for Arizona Site Intel Circles. She has been with Intel since 1974. She has worked in Manufacturing, Manufacturing Training, and is currently a Manufacturing Trainer as well as Assistant Circle Facilitator. Kay is currently Publicist for the Valley of the Sun Chapter of the IAQC.

Successful Integration of the Quality Circle Process with Task Forces at Los Alamos

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Task force success at Los Alamos National Laboratory has resulted largely from effective integration of the quality circle process with the task force unit. This integration has contributed to significant organizational improvements by removing the barriers that otherwise could have prevented the necessary level of creative thinking and problem solving. Examples are presented for three ongoing Los Alamos task forces that were chartered, respectively, to (1) reduce personnel radiation exposures, (2) enhance nuclear safeguards instrumentation, and (3) improve operations at an underground nuclear materials storage vault.

INTRODUCTION

Numerous ad hoc task forces at Los Alamos National Laboratory in Los Alamos, New Mexico, have been highly successful largely because of their effective integration with the quality circle process. This process, sometimes referred to as participative problem solving or employee involvement, is predicated on the belief that, if properly trained, employees can best solve problems affecting their own work because they are closer to the problems. Widespread success of the quality circle process and of its integration with task forces at Los Alamos has shown that people take more interest and pride in their organization and its work if they are allowed to influence decisions concerning its direction.

BACKGROUND

Like quality circles, task forces are teams of employees that meet regularly to solve problems. These teams collect data, do necessary research, solicit input from all concerned, and finally submit recommendations to the proper authorities for their review and decision. Unlike quality circles, task forces are of limited duration and generally do not comprise volunteers from the same work unit meeting to identify and solve problems in their own work area. Instead, task forces are normally established to solve problems that have already been identified as requiring coordination across departmental or organizational boundaries. Hence, task force membership usually crosses organizational lines to involve employees with the necessary knowledge and experience to succeed at the assigned multifunctional task.

INTEGRATION

At Los Alamos, task force integration with the quality circle process begins with a review of the principles and concepts underlying quality circles and the way they function. This review includes a discussion of the common elements of effective teams, team leadership, roles and responsibilities of team members, and group dynamics. Next, task force members receive some basic training aimed at increasing their ability to analyze and solve problems as a team. Typical training includes team brainstorming, data gathering, cause-and-effect problem solving, and decision analysis. During this brief (usually just a few hours), but important training period, emphasis is placed on the quality circle process as an effective mechanism for promoting creative problem solving through open and flexible communication.

Following the up-front team building and training in the quality circle process, task forces at Los Alamos have proved to be remarkably exciting and fluid devices for multifunctional problem solving and practical implementation. They have demonstrated that, given the time to meet, effective leadership, proper support, and training in communications and problem solving, they can contribute substantially to improving organizational effectiveness. In short, effective integration with the quality circle process has been an unparalleled spur to task force success in systematically analyzing and solving work-related problems.

EXAMPLES

The quality circle process has been successfully integrated with several Los Alamos task forces. Examples are presented below for three ongoing Los Alamos task forces that were chartered, respectively, to (1) reduce personnel radiation exposures, (2) enhance nuclear safeguards instrumentation, and (3) improve operations at an underground nuclear materials storage vault.

The first of these task forces is called the Radiation Exposure Control (or RADCON) Team, which represents a cooperative effort among representatives of both operating and health and safety groups to reduce personnel radiation exposures at a Los Alamos nuclear materials research and development facility. The RADCON Team mission includes heightening personnel awareness of the "as low as reasonably achievable" radiation policy; identifying and anticipating problem radiation exposure areas; identifying alternatives for further reducing radiation exposures; and recommending, implementing, and evaluating specific radiation control measures. The current success of the RADCON Team is evidenced by further reductions in Los Alamos personnel radiation exposures from levels that were already in full compliance with nationally accepted standards. This success is largely attributable to the team's effective integration with the quality circle process and the interest and willing participation of all team members and other contributing personnel.

The second task force described here is the Nondestructive Assay (NDA) Task Force, which has a mission of examining the current NDA capability for process monitoring, control, and accountability at a Los Alamos nuclear materials research and development facility; determining and prioritizing current and projected NDA needs; recommending corrective actions; and preparing an implementation plan that includes milestones and required resources. Experts in safeguards, nuclear materials processing, and remote-systems technology, representing seven Los Alamos groups in three separate divisions, are members of this task force. Again, the current success of the NDA Task Force in enhancing NDA capability at Los Alamos is largely attributable to the task force's effective integration with the quality circle process.

The third and last task force described here is the Vault Task Force, which has a mission of examining current operations at a Los Alamos nuclear materials storage facility and recommending improvements to criticality safety, radiation safety, and safeguards. As with the task forces described above, the quality circle process was employed from the beginning to maximize team participation in generating and evaluating a comprehensive list of prospective upgrades. Several administrative controls have been recommended and implemented for immediate vault improvement. Furthermore, construction of an automated vault has been identified as the most cost-effective, long-term solution for assuring full compliance with all current and projected criticality safety, radiation safety, and safeguards regulations, and implementation is underway. Again, the success of the Vault Task Force in improving nuclear materials storage operations is largely attributable to the task force's effective integration with the quality circle process.

CONCLUSIONS

The use of task forces in conjunction with more functionally focused quality circles can greatly enhance the employee involvement and, hence, overall effectiveness of an organization. At Los Alamos National Laboratory, numerous ad hoc task forces have been highly successful largely because of their effective integration with the quality circle process. This integration, with its up-front "quality" team building and training, has helped assure the success of these task forces by removing the barriers that otherwise could have prevented the necessary level of creative thinking and problem solving.

BIOGRAPHY

Carl A. Ostenak is currently a staff member and deputy group leader of the Nuclear Materials Management Group at Los Alamos National Laboratory. He manages about 35 people responsible for establishing and maintaining state-of-the-art materials control and accountability procedures, assay instrumentation, and equipment to support nuclear materials processing, research and development, and safeguards. Since joining the Laboratory as a staff nuclear chemical engineer in 1978, Mr. Ostenak has engaged in the design, development, operation, evaluation, and upgrading of nuclear materials processing and safeguards systems. He has authored over 30 technical publications, participated on several U.S. Department of Energy and International Atomic Energy Agency working groups for technology exchange, submitted a patent application for improving nuclear materials processing, chaired numerous task forces, established and led two quality circles, participated in the Laboratory's Educational Outreach Program, and, in 1985, was nominated for Esquire Magazine's annual special section on outstanding young American scientists under 40. Mr. Ostenak earned his Master of Science degree in Nuclear Chemical Engineering from the University of Arizona in 1978. He is a member of the American Chemical and Nuclear Societies, the Institute of Nuclear Materials Management, and the American Association for the Advancement of Science, and is currently applying for membership in the International Association of Quality Circles.

First-Line Supervisors as Facilitators: A Proven Method to Create Permanent Employee Involvement

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First-line supervisors as full-time facilitators for a nine month period of time is a proven method for integrating facilitation and communication skills, productive meeting skills, and problem solving skills into the organization. This paper will explore the use of this strategy at Boeing Commercial Airplane Company.

INTRODUCTION

At the Fabrication Division of The Boeing Commercial Airplane Company, (BCAC), rotating management facilitators have been used since March, 1982 in support of Productivity Circles. This strategy has proven useful in building a strong facilitator staff that is versed in "behavioral science theory" and "real world experience." More importantly, it is a strategy that has proven effective in accelerating the change process within the Fabrication Division to a more participative approach of management in its day-to-day operations.

BOEING COMMERCIAL AIRPLANE COMPANY (BCAC)

The Boeing Company is divided into a number of subsidiary companies including BCAC which is made up of seven divisions. The Fabrication Division is part of BCAC and headquartered in Auburn, Washington. As an internal supplier of critical parts to all Boeing commercial airplane models as well as many other company products, the Fabrication Division is the largest division in BCAC. The Division builds 1.5 million parts per month, and has the biggest machine shop in the United States under one roof. Total division employment ranges from 12,000 to 15,000 depending on program cycle with upwards of 10,000 at the Auburn site.

PRODUCTIVITY CIRCLES AT THE FABRICATION DIVISION

Productivity Circles started at the Fabrication Division in 1981; and currently two programs exist for Fabrication employees. One circle process is for the Puget Sound area, and another circle process is for BCAC Fabrication Boeing of Portland. The name, Productivity Circles, was chosen over the more familiar name, Quality Circles, to separate the effort from the more traditional Quality Control function and to encourage a broader selection of projects. Although both programs have rotating management facilitators, the comments and statistics in this paper address the BCAC Fabrication circle process in the Puget Sound area. The definition we are currently using for Productivity Circles has the following elements:

- Employees with similar work
- Supervisor is the team leader
- Participation is voluntary
- Meet one hour each week on company time
- Receive structured training
- Rationally solve problems
- Work anything but personnel related issues and interpersonal conflicts
- Implement and monitor effects of solutions

The intent of this structure is to provide a situation where employee development can occur; communication between work teams, management, and technical support happens frequently with a productive outcome; the Fabrication Division becomes a more satisfying place to work and continuous quality improvement becomes the norm.

As of January '87, there were 280 circles with a projected growth of 60 circles by December '87. The percent of involvement will grow from 21% to 29%. Complimenting the circle process has been the recent drive towards continuous quality improvement and the initiation of tools such as statistical process control methods and teams of managers to tackle chronic systems problems. Looking less and less like a "program", Productivity Circles are now seen as part of each organization's plan for continuous quality improvement.

HISTORY OF ROTATING MANAGEMENT FACILITATORS

The circle process began in Manufacturing during March of 1981. After a successful pilot program of six months duration, it was decided to expand. This called for the addition of a second full-time facilitator. As the number of circles continued to grow, two concerns surfaced. It became unclear what the saturation point for circles was (how many could be started and supported), and how many facilitators were needed. Furthermore, the company was passing through a recession, and as an overhead activity, circles were susceptible to potential cost cutting requirements. As a result, there was a need to reduce this risk while continuing to gain support for the idea of employee involvement through circles. It was proposed that first-line supervisors would be loaned for one year to the Productivity Circle program as full-time facilitators. The benefits were perceived as twofold: 1) It reduced the risk if the facilitator staff were to suffer cut-backs. Rotating facilitators could be absorbed back into their respective organizations. 2) The opportunity to spend a year on the facilitator staff was presented as a valuable form of management development.

It was decided these individuals would have to be candidates who were previously identified for upward mobility, and highly regarded by the organization from which they were loaned. A management development strategy is used in the Fabrication Division whereby a percentage of the management team is identified for growth and promotion. Every effort is made to give these individuals a variety of job assignments. The opportunity to facilitate was viewed as a unique opportunity to develop coaching, training, problem solving and group process skills as well as provide meaningful exposure to different disciplines. Upon completion of their rotation, they would return to the organization from which they came and their performance rating would remain stable while they were facilitators.

As a result, the facilitator staff is made up of permanent staff members and rotating staff members, with about a 1/1 headcount ratio. While the permanent staff gives guidance, training and coaching to the rotating staff members, the job all facilitators perform is essentially the same. Furthermore, the rotation has been reduced to nine months to allow a greater number of first-line supervisors the opportunity to participate.

FACILITATOR ROLE

The facilitator role can be divided into three major functions: Administrator, Trainer and Process Consultant.

The Administrator role is a nice way to say "paperwork." In the past year, this function has become streamlined, and most reporting functions have been turned over to the circles and the organizations to which they belong. The facilitators are not responsible for any clerical functions connected to the circles. They are only responsible for reporting measures on the teams that fall under their umbrella. Such things as member count, hours expended, cost savings, etc...fit under this category.

The second role of the facilitator is to be a Trainer. We have a number of different training classes. These include a three-day leader training class, a one-day leader update session, a two-day mid-management seminar, a one-day member update training class, and a 10-week (one hour each week) new circle training class. The facilitator staff is responsible for training each one of these classes except the new circle training class. The team leader is responsible for training his/her team with assistance from the facilitator.

The third function of the facilitator is to be a Process Consultant. The immediate objective is for the circles to become self-sufficient and independent. Currently, the facilitators have between 15 and 20 circles apiece. It is the goal of BCAC Fabrication to give everyone in the division the opportunity to participate in circles without significantly increasing the facilitator staff, and therefore, the ratio of circles to facilitator is likely to become greater.

As a result, the facilitator is looking more like a "crisis manager" rather than a "circle sitter." Following the first project, circles are attended by facilitators based on a requested requirement by the circle or an evaluated need by the facilitator. All members (leaders are members) are expected to be responsible for their own group process and problem solving, and each organization is expected to "take ownership" of their teams.

The overall intent is to move the facilitation role out of the teams, and eventually eliminate this function altogether. This orientation is sometimes difficult for the rotating staff members when entering their rotation. The expectation that the facilitator and circle will separate when a level of self-sufficiency is attained must be built-in from the beginning. Otherwise, there is a tendency for facilitators to "own" their circles, which fosters dependency.

ROTATING MANAGEMENT FACILITATION EXPERIENCE

To date, (January '87), seventeen first-line supervisors have rotated through the circle staff and an additional eight are currently completing their rotation. The number of disciplines participating in the loaned facilitator process has grown as circles have expanded into every discipline within the Fabrication Division.

When a new rotating management facilitator is identified by an organization, an interview is scheduled that includes the management facilitator, his/her supervisor, and the Productivity Circle Manager. The purpose of the interview is to discuss expectations, identify areas for growth, and communicate the importance given to this assignment.

Upon beginning the assignment, there's typically a two-week tie-in between the incoming facilitator and the individual he/she is replacing, (who is leaving the staff to go back to their home organization). This time is allotted to observe as many different circle meetings and facilitators as possible and learn the specifics about the individual circles the new management facilitator will assume. After receiving a schedule of teams to facilitate, he/she is turned loose. Although there is little in the way of formal training, the nine month rotation is intended to result in a cluster of skills that are transferrable when the management rotator returns to her/his organization.

These skills include group process skills, problem solving skills, coaching/listening skills, and training/speaking skills. Although formal facilitator training is certainly an option to address these skills, we have used mainly "on the job training" (OJT), and daily and weekly debriefings between facilitators - experienced and inexperienced, permanent and rotating. Concerning OJT, one former rotator explains:

> As I came more accustomed to my new environment, my skill level and confidence grew in quantum leaps. The first leap occurred in about 2 months. I could make interventions in the meetings that made sense and without embarrassment. The second major jump began when I started doing the training. I had never trained before and my confidence was shaky anyway, particularly with the permanent facilitators watching. After doing it a couple of times, with the help of the permanent staff, my presentation and training skills really grew.

The second major tool, daily and weekly debriefings, is also critical for the learning process for management facilitators. It is important for the facilitators to have the freedom to debrief among themselves, and discuss interventions, team processes, different styles of management, member behavior, etc.

These two styles of training work very well in our environment due to our high turnover of rotating staff where one new facilitator joins (and leaves) every few months.

One of the most consistent observations that can be made of the new management facilitators themselves is their discomfort with the "pace" and perceived "slowness" associated with facilitation. For the most part, these individuals come from environments that are highly structured, with a high degree of accountability and visibility. Facilitating circles, on the other hand, is largely an independent activity. Most take this assignment very seriously and go through a period of self-analysis and evaluation as they struggle to form a set of beliefs and a conceptual framework to guide their facilitation. As one former management facilitator explains:

> The first week was terrible, coming off the floor, I had so much extra time. On the floor, decisions have to be made almost minute by minute. All I did the first week was go to team meetings and ponder my style of management... At the time I had a great need for structure, and was not given any. I never could understand this, but think I do now. Looking back, it is a good thing structure did not exist, and we were allowed to explore ourselves, team process and different management styles. I had an opportunity to free-wheel, be spontaneous and take it in like a sponge. It is the "lack of structure" that kept the process alive.

The above reflections reinforce the importance of the need for a management rotator to be a self-starter. Like most activities, they get out of it what they put into it. A facilitator can either be bored and sleepy at team meetings or he/she can be attentively watching team process and contemplating the impact of past, present or future interventions. Consequently, the debriefings become critical for the new management facilitator particularly during the first few months to set the stage for their orientation during the rest of the tenure as a full-time facilitator.

During the rotation period, the management facilitator does not facilitate teams in his/her home organization. A conflict of interest can exist if they do facilitate home organization teams, and some of the tough interventions that need to be made with the teams, leaders and management might not occur or be as effective as they need to be.

The nine month rotation ends with an exit interview with the rotator, circle manager and rotator's supervisor. The purpose is to complete the loop that was initiated with the entry interview and to evaluate the management rotator's experience.

RE-ENTRY INTO THE HOME ORGANIZATION

What happens when a management rotator returns to his/her home organization? Virtually all rotators have reported a feeling of awkwardness or strain upon returning. After managing the transition, however, many are making a significant impact on their boss and colleagues, while also attempting to develop a new relationship with their work teams based on what they learned during their management rotation.

Returning to one's home organization can be awkward, and is bound to require time to redevelop relationships. As one former facilitator explains:

> The big question I faced was: Will the people accept me?

Another stated:

> I find that I'm a lot more holistic in my perspective than many of the other managers, including my boss. This can cause tension.

A third former facilitator describes the awkwardness this way:

> I now feel like I have skills that aren't being utilized to the fullest extent. I'm waiting for the system to support these skills.

A rotating management facilitator has developed awareness and new skills that will impact the organization to which she/he returns. However, the status quo is comfortable and familiar, and will always be difficult to change. Most returning management facilitators feel the subtle but strong pressure to conform to the "old" way of doing business. In response, many former facilitators are carefully finding ways to share their new knowledge and skills without alienating themselves.

One example is the impact former facilitators are having on meetings in their home organizations. They encourage the use of productive meeting tools that are taught in the circles. Some are regularly critiquing staff meetings (including their manager's behavior). As one former management facilitator explains:

> Staff meetings are no longer a mish-mash...more and more colleagues are learning how to manage discussion and run effective meetings.

Another management facilitator explains:

> My colleagues were initially surprised by my openness and willingness to bring out problems.

The result is that new norms are being created where ongoing problem solving is expected and encouraged. Prior to this time, fear of reprisal kept supervisors from sharing anything but "good" news.

A second example is that rotating management facilitators are finding it easier and more rewarding to work with their people. Most are holding meetings with work teams more frequently stressing greater communication and openness and using group problem solving skills. All have a greater understanding of how to build a team and foster teamwork. As one former facilitator states:

> I have learned how to ask the right questions, and listen. This skill is highly appreciated. I have discovered that people like to be listened to... I have also learned how to observe non-verbals. These skills have created within me a tendency not to make assumptions about people and situations until I have the needed information.

Another states:

> I have more people skills and can express myself better. I have used these skills in the shop to get people to become more aware of their work, collect data on problems rather than just complain, and do projects on their own.

Yet another former facilitator describes how he meets with his work team informally every morning. He states:

> We study ongoing problems using checksheets. We're learning to scrutinize problems, such as machines with repeated bearing failures...I have also improved the relationship with my crew by finding and complimenting them on the things they do right. This is something I have not always done.

Middle and upper management is recognizing that they must now find ways to utilize and integrate the knowledge and skills the rotating facilitators bring back. These individuals have proved to be an excellent catalyst for change within the organizations.

ADVANTAGES AND DISADVANTAGES

A. Advantages

The advantages to be derived from using rotating management facilitators are many. Perhaps the most obvious and quickest to occur is a strengthening of the facilitator staff and the service it provides. The benefits of blending "behavioral science theory" with "real world experience" should not be underestimated.

The permanent facilitators are capable of modeling and describing useful concepts and skills while rotating facilitators have insight into the way co-workers think and the often unspoken culture that permeates the organization. The facilitator may know "what" she/he wants to accomplish while another may provide suggestions on "how" to accomplish it.

The long term and largely unmeasurable advantages begin when the rotating management facilitator returns to their home organization. All rotating management facilitators leave the program with a broader understanding of the multiple functions in the division. They also have developed new relationships with managers at all levels and across organizational lines. This increased network of contacts enhances their career prospects in the future. They take back to their organizations methods for statistically analyzing and diagnosing problems. They influence their co-workers and work teams by practicing and modeling enhanced group process skills, leadership skills, productive meeting skills, and communication skills, In short, they are uniquely prepared to assist their organizations in its transition to an organization that emphasizes continuous quality improvement. Further aiding that transition is the additional guidance the former rotating management facilitator can now give his/her manager as to where to start additional circles and how best to develop existing circles.

B. Disadvantages

Managing an employee involvement effort that utilizes rotating management facilitators is not without its drawbacks. Most of the difficulties the Fabrication Division has encountered are the result of misunderstandings and misperceptions. Some to be wary of are the following:

First, the disciplines which sponsor rotating facilitators differ in their commitment to the concept of supervisors being facilitators for a nine-month period of time. This reflects in their unwillingness to send certain candidates and their lack of foresight to create opportunities that capitalize on a management rotator's advanced skills when he/she returns to their home organization. Some middle managers feel like they are losing a valuable asset by letting one of their first-line supervisors go, and are unsure what they are getting in return.

Second, loaned management facilitators may feel they are "not being taken care of" during their rotation unless there is regular communication with their managers. All the rotating facilitators have expressed a desire to know more about how their immediate management (in their home organization) views their "special assignment," and if it will benefit their careers.

The above two perceptions need to be managed. They are the result of norms and values held on the part of some division management that suggests "real jobs are jobs that produce a part; all other jobs are insignificant and of little value." This results in an inability to institutionalize the experience of being a facilitator as a legitimate and valuable form of management development. As more success stories become evident and organizations attempt to change to meet today's requirement for enhanced effectiveness and ongoing quality improvement the experience will be valued by more managers, and the opportunity to facilitate will be sought out by more first-line supervisors.

Third, a truly legitimate concern for rotating management facilitators is their loss of "competitive edge." This is most likely to occur in disciplines that are experiencing rapid change (possibly technological), and the rotator no longer feels he/she has the necessary expertise to do the job.

Fourth, one of the most difficult side effects of utilizing management rotators has been the inescapable disruption it adds to a facilitator staff. As the circle process has grown and more rotating facilitators have been added, it has been increasingly difficult to manage the "revolving door." It has proven to be very hard to consistently communicate administrative procedures and desired outcomes of the facilitation process as new management facilitators enter their rotation. This is compounded and further intensified by the evolutionary nature of the employee involvement process in the Fabrication Division.

Lastly, there are likely to be differences in theory, practice,and skill levels between "permanent" and "rotator" staff members. This can result in strain and is further intensified because the permanent staff is "non-management." Some rotating facilitators have difficulty listening to and taking guidance from individuals who do not have "management status." This resistance can be reduced if the strengths of both types of facilitator are recognized, articulated, and appreciated. When blended, the differences become a powerful base from which to address program concerns.

SUMMARY

The use of first-line supervisors as full-time facilitators for a nine month period of time is both a novel approach to integrating a new style of management within an organization and a positive strategy for impacting "the bottom line." Rotating management facilitators can provide "real world experience" to a facilitator staff, and thereby strengthen the employee involvement process. The delayed, yet more significant impact of using rotating management facilitators is the effect they have on their home organizations when they return. The advantages greatly outweigh the disadvantages connected with the utilization of managers as full-time facilitators. The struggles inherent in this approach are worth the efforts they require to resolve, and are an integral part of the quest for lasting organizational change.

NOTE: Special thanks to John G. Hreha and Robert McDonald for their input into this paper and their origination of the rotating management facilitator concept within The Boeing Company.

BIBLIOGRAPHICAL INFORMATION

Don Pomraning, M.S., joined The Boeing Company in 1984 and has performed managerial facilitation, training, and consulting roles. Prior to 1984, Don spent 2.5 years at Martin Marietta Aerospace doing Human Systems Development work which included QC's. Don has spoken at the American Society for Training and Development National Conference and numerous local and regional seminars on employee involvement.

Todd Dunnington, M. A., joined The Boeing Company in 1984 and has performed managerial, facilitation, training and consulting roles. Prior to joining Boeing, Todd consulted for a management consulting firm specializing in developing creativity and innovation within organizations. Todd has spoken at IAQC regional conferences and taught at the University of Washington.

MIDDLE MANAGER INVOLVEMENT IN EMPLOYEE INVOLVEMENT

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Our primary job is not to make circles self-sufficient, self-facilitating or self-managing, but to develop a corps of middle managers who can coordinate, train, facilitate and lead their people to do so. This paper describes a strategy to achieve this and tracks the evolution of three middle-manager led teams, the members of which are supervisors who lead circles.

BACKGROUND: EAST JEFFERSON GENERAL HOSPITAL

This paper describes one aspect of our employee involvement effort at East Jefferson General, a not-for-profit community hospital located in Metairie, Louisiana, a suburb of New Orleans. Though only fifteen years in existence, East Jefferson is licensed for 556 beds and employs 1,700 people (full-time and part-time).

We began our employee involvement effort at East Jefferson in 1983 with the formation of a single quality circle in the CAT Scan area of radiology (for a description of one of their projects, see CAT Scan Quality Circle 1986). The CAT Scan circle succeeded, and in January 1985, we undertook our first leader-facilitator training course, followed by the formation of eight additional circles. Today, we have concluded nine such courses and have formed a total of 33 quality circles led by supervisors and six management teams led by department directors (a description of our training design can be found in Keymer and Thompson 1986).

BACKGROUND: PRINCIPLES

General literature and, more importantly, previous experience (Thompson 1982a, Thompson 1982b) led us to formulate three principles that have become the underpinnings of our strategy:

1) Support By Middle Managers Is Essential For The Success Of Employee Involvement

Middle managers have a powerful effect on the management practices of an organization for one simple reason: They determine how supervisors supervise. They do this in two ways. First, they are the most immediate and influential **model** from which supervisors learn how to manage. Second, they are the primary source of **rewards and punishments** for supervisors -- daily by what they say, annually by merit raises and, ultimately, by promotions.

If middle managers support employee involvement practices by modeling them and rewarding those who do them well, the practices will be adopted. If they don't, the practices will probably never be adopted on their own merits and will only exist insofar as the organization builds a support agency to circumvent middle managers (and often supervisors as well).

2) A Staff Of Professional Quality Circle Facilitators and Trainers Tends To Develop Into An Agency External And Hostile To Middle Management

Creation of a professional staff of employee-involvement experts, beyond the minimum essential to start the effort, can lead to the creation of a group of specialists that competes with middle managers. It does so in three ways. First, it functions as a second channel through which employees communicate to or receive communication from executive management. Second, it sets up its own **model**, as well as **rewards and punishments**, in contrast to (and often conflict with) middle managers. Third, it tends to take credit for the success of employee involvement efforts and put blame on middle managers for failures.

In the short run, this parallel management hierarchy may promote and sustain employee involvement activities, as well the personal ambitions of those who man its positions, but it does so at excessive cost to the organization in both money and conflict. And, when it ceases to exist (an inevitability because of its cost), so too do employee involvement practices.

3) A Good Measure Of Long-Term Success Is The Number Of Middle Managers Using Employee Involvement Practices Regularly

This principle follows logically from numbers 1 and 2. The problem, of course, is how to convince middle managers to adopt the practices. The traditional approach is to "tell them to do it," either through polite presentations ("How to support your quality circles," "How to behave at a management presentation") or more heavy-handed training programs mandated by executive management (Thompson 1982b). Also common are the elaborate and highly contrived measurements of the results of quality circle "programs," intended to prove that employee involvement produces results and, by implication, that any intelligent middle manager should automatically convert in order to attain those results.

Both of these activities are frequently necessary, but seldom sufficient. They are necessary to acquaint both executive and middle managers with the idea of employee involvement and a reason to pursue it. But neither involves middle managers directly in employee involvement. They are essentially passive. They don't give the middle manager a role in the effort. And, without a role to play, middle managers have no stake in its success or failure.

OUR STRATEGY

In order to win support of middle managers, we have adopted a strategy of involving them actively in all major functions in quality circles: **facilitating, training, coordinating** and **leading**. Our expectation is that, by giving them direct and personal responsibility for fulfilling key roles in the effort, they will find ways to fit employee involvement practices to their needs and adopt them as their own.

Facilitating

We choose our facilitators exclusively from the ranks of department directors or assistant department directors, a management category that conforms precisely to the generic term middle manager (supervisor of supervisors). Any director or assistant director may be a facilitator, but may not facilitate a circle within his own department.

We define the facilitator's role, not as program coordinator, but as a coach to a leader. Though some facilitators now work with two or more leaders, initially each facilitator is assigned to one and only one leader. All leaders must be supervisors (responsible for employees beneath them and for whom they write performance appraisals). Both director-facilitators and supervisor-leaders are volunteers. So far, 42 directors and 57 supervisors have volunteered to be facilitators and leaders, respectively.

Training

To initiate circles, we pair a director-facilitator with a supervisor-leader and put them through a 40-hour training course. The ultimate objectives of the course are to prepare leaders to promote, form and lead a circle, on their own, among their employees, and to prepare facilitators to coach leaders to do all this successfully (Keymer and Thompson 1986). To achieve these goals, the course creates experiences designed to build a solid bond between leader and facilitator and develop their ability to work together as a pair.

The first four leader-facilitator training courses were led by the full-time administrator for quality circles and a full-time trainer, on loan from the staff development department. However, in all subsequent courses, individual modules have been farmed out to active supervisor-leaders and director-facilitators. A total of twelve leaders and facilitators have led training sessions. At present, these guest trainers are responsible for as much as 80% of the course, the remainder handled by the administrator.

There are multiple objectives in this tactic. First, it rewards successful leaders and facilitators. They feel honored to be chosen to speak for the quality circle effort as experienced and knowledgeable practitioners. Second, it transfers their knowledge to their peers. Third, it keeps them consciously aware of and thinking about techniques, such as the construction of histograms, that they might otherwise avoid. Fourth, it increases their stature in the eyes of the their peers. Fifth, and most important, it transfers the ability to perpetuate employee involvement practices to middle managers, themselves.

Coordinating

Though we have a full-time administrator, and will have for some time, one of our goals is to turn over coordination to both director-facilitators and supervisor-leaders. This is being accomplished in two ways.

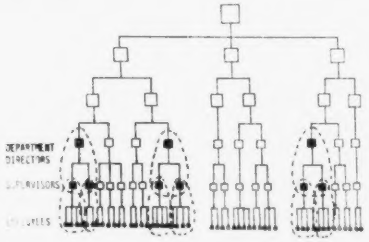
First, we have developed a committee of representative leaders and facilitators -- called the Committee of Ten -- that helps to oversee various aspects of the effort. This grew out of our practice of periodically holding on-site luncheons for all leaders and facilitators. At one of these meetings the members rejected a recognition program as proposed by the administrator and selected a Committee of Ten (five facilitators and five leaders) to come up with a program more to their liking. Eventually this committee proposed a lapel pin for all members, annual lunches with administrators and a bulletin board in the lobby as the components of the recognition program for 1986. In addition, it has taken on responsibility for representing the circle effort before the administrative council and the board of directors. In due time, planning and coordinating of training courses can be handled by this committee, as well as the actual teaching, as described above.

The second method of turning coordination over to middle managers entails encouraging department directors to take responsibility for designing and implementing employee involvement within their departments. This is a subtle process closely ties to the development of management teams, the topic of the next section.

Leading

We encourage all director-facilitators to form and lead a "circle" composed of their supervisors, a structure we designate a **management team.** These groups are formed under the banner of quality circles and operate by circle rules. The facilitator, to date, is always the quality circle program administrator.

Since supervisors are also leaders of quality circles in their work groups, the management team is really a **circle of circle leaders,** led by the director who is also a facilitator for a leader and circle in another department. The resulting structure is illustrated in the following simplified diagram.



At present there are only five management teams at the hospital but we expect that there will eventually be one in every department. We are in what might be called the "pilot" phase of management teams and are just beginning to learn what they can do and how they can best do it. It is our preliminary conclusion, however, that they are a vital element in a successful employee involvement effort. What follows are brief histories of three management teams at East Jefferson General Hospital.

6E NURSING MANAGEMENT TEAM

The 6E nursing unit contains 46 beds, all of which are dedicated to medical-surgical patients. It operates twenty-four hours a day, seven days a week. The unit is headed by a unit director (middle manager), who oversees three assistant unit directors (supervisors), known as AUDs, each responsible for a shift (day, evening and night). The staff consists of registered nurses (RNs) and licensed practical nurses (LPNs), nursing assistants and unit secretaries.

In January, 1985, the director and one of the AUDs from 6E attended the first leader-facilitator training course. The director was paired, as a facilitator, with a supervisor from cardiac rehabilitation. The AUD was paired, as a leader, with a director-facilitator from physical therapy.

In February, the 6E AUD and her facilitator made a presentation on quality circles to all the employees of 6E and invited them to join. The day-shift employees expressed the most interest and a circle, composed of a mix of RNs, LPNs, assistants and secretaries, was formed on that shift. In the next two training courses, the other AUDs were trained and similarly structured circles were formed on the evening and night shifts.

About one year later, in early 1986, the director, who, as facilitator, had participated in the successes of the cardiac rehabilitation circle, promoted the formation of a management team, composed of herself and the three AUDs. She did so for three primary reasons. First, the three circles in her unit were successful and the formation of a management "circle" seemed a logical next step. Second, the circle process would, she felt, help to control her take-charge personality and allow her AUDs an opportunity to grow. Third, she had come to believe that, though she was accountable for the management of her unit, her AUDs had many solutions to offer, often better solutions than she could come up with, and she needed their help.

The management team meets in the director's office once every two weeks, for one hour, following the traditional AUD-Director (staff) meeting, also one hour. The quality circle portion of the meeting is designed to be separate from the regular meeting, but over time the participants report that the entire two hours has become more like a quality circle and it is impossible to tell them apart.

In format, the gathering is formal, adhering to all the rules of quality circle participation. Minutes are taken and distributed to participants and relevant managers. Though there is a facilitator assigned and available (the quality circle administrator), by agreement with the director-leader, he has not attended meetings.

While the management team addresses many smaller problems, it has undertaken a number of major projects over the last year.

1. **A sign-out list for breaks and meals.**

   Some nurses always took their allowed breaks, while others never did. The AUDs felt that all their nurses should have an opportunity for a break, but that many did not take them because they felt guilty about leaving their patients.

   The solution, a sign-out list, made the break "official" and required designation of a "covering nurse" while another was out. Anticipated resentment to having to sign out and in never materialized. In fact, nurses who had not been taking breaks were pleased to find out that their dedication had been recognized, as well as delighted to have a system that allowed them to take a near guilt-free break.

2. **Responsibility for end-of-shift admits.**

   Admitting patients to the unit, with paperwork, explanations of equipment and seeing to the comfort of patient and family, takes approximately forty-five minutes or more. When patients are admitted to the unit in the last hour of the day shift (2-3 p.m.), day-shift nurses frequently have to stay over, with resulting delays in car-pools, picking up children at school, etc. Since the evening shift people are already on the unit, preparing to take over, there is inevitably confusion over responsibility for admits -- day shift wants evening shift to do it and evening shift, not yet "on the clock," maintains that day shift should to it.

   To resolve this issue, the management team took a poll of day and evening shift employees to determine a preferred cut-off time at which evening shift would take on responsibility for admits. Armed with this information, they established a time and made it policy. Since the shifts had been involved in the poll, there was general agreement and compliance with the chosen time.

3. **Extra points check list for nurses.**

   As supervisors, the members of the management team found the standard forms for performance appraisals inadequate for assessing the true performance of LPNs. The primary difficulty was that it did not cover all dimensions of the job. The standard form focused on the basic essentials, but did not provide recognition for the extras that make for excellent or outstanding performance.

   To compensate, they developed an additional list of dimensions and adopted them as policy on the unit. Eventually, these dimensions were integrated into the standard form hospital-wide.

Finally, the department director reports that she will enthusiastically continue to lead her management team and support the quality circles in her department because 1) they keep her on her toes, 2) maintain a level of trust in her department -- everyone has the opportunity to operate from the same information base and 3) keep everyone focused on problems, not personalities.

Final Note: Since their formation, the three circles on 6E have always found it very difficult to meet. Regardless of shift or time, the demands of patients and physicians either kept them from meeting or interrupted their meetings. After a year, it appeared as though circles might not survive. However, about the time the management team was formed, the department director held a series of meetings for all employees in the unit, utilizing standard quality circle techniques and format. Because of the large number of people and the relentless need to attend to attend to patients, these meetings were organized by job categories; she met with secretaries in one meeting, assistants the next and RNs and LPNs last. During the second meeting, the assistants suggested that this system be used for quality circles. The department director and AUDs agreed and the circles were restructured around job categories. This meant that, while secretaries meet, assistants and nurses can cover the desk. While nurses meet, assistants can cover the floor. While assistants meet, nurses can cover the floor. All shifts are represented by swinging the meetings from the first hour on day shift (thus allowing the night shift to attend) to last hour on day shift (thus allowing the evening shift to attend). Circles are now thriving.

MATERIEL MANAGEMENT TEAM

The Materiel Department is composed of four sub-departments (storage and distribution, mailroom and printing, central processing and purchasing). Each has its supervisor who reports to the department director. There is also an assistant department director.

In January, 1985, the supervisor of central processing attended the first leader-facilitator training course and, with the help of her facilitator, a unit director from nursing, formed a circle in her area. In subsequent training courses, two more supervisors went through training. One, in printing and mail room, never formed a circle because all but one of her employees were let go as a result of a hospital-wide reduction in force. The other, in storage and distribution, formed his circle with the help of an assistant director-facilitator from housekeeping. Eventually, the department director of Materiel went through training as a facilitator for an ambulance drivers circle, as did the assistant director as a facilitator for the emergency room and the purchasing supervisor as leader of her own circle, with a facilitator from nursing administration.

In February, 1986, following his training as a facilitator, the Materiel department director decided to start a management team composed of his assistant director the the four supervisors (supply-distribution, print shop and mail room, purchasing and central processing). He was motivated primarily by a desire to get a diverse department working together toward common goals. The quality circle administrator serves as facilitator.

The team meets once each week, at 8:15 and 9:15 a.m. on Wednesdays, in a training room away from the work area. Standard quality circle format and rules are followed. There is always an agenda, prepared by the department director leader but agreed to by the members. It and all discussion and decisions are written on flip charts and posted around the wall. A secretary takes minutes and routes copies of them to all interested parties, including their administrator and the quality circle administrator. Emphasis is placed on participation, consensus and enjoyment. One of the members regularly brings doughnuts and coffee. Though the meeting has a formal structure, the atmosphere is usually open and spirited. When the hour is up, the group evaluates the meeting by brainstorming what it liked and disliked and what it will do differently next time.

Control over topics and decisions about actions to take are firmly in the hands of the members. This has come out clearly on a number of occasions in which the members have decided that certain topics be handled in the regular supervisors' meeting in which the department director can dictate a solution (held at another time in another location). In addition, members have used the "likes and dislikes" vehicle to chide their department director leader for "putting words in their mouth."

Since its formation in January, 1986, the management team has undertaken a number of major projects.

1. Received and delivered all items within three days.

   In response to criticism from requisitioning departments, the management team set the preceeding goal and assisted the supervisor of storage and distribution in achieving it. He, in turn, worked through his quality circle, to set up a system of feedback on the total number of items received and the length of time taken to process and deliver them.

2. **Increased communication between Materiel and other departments.**

   The team developed a questionnaire, sent it to department directors and analyzed each to establish a base-line on the performance of Materiel and to identify specific problems in relation with customer departments.

   In addition, the team is in the process of producing a brief slide show on the department, each of its sub-departments and how to interact with it. This program will be on slides and will be shown to affected customer departments every three months.

3. **Develop output measures for the sub-departments of Materiel and establish expected performance levels.**

   The team is in the process of systematically defining the goal of each sub-department , output measures that reflect that goal and levels of performance considered acceptable. In addition, the team is rewriting job descriptions for each job within a sub-department to reflect goal, measures and expectations.

Finally, the department director reports that team meetings and team activities have resulted in greatly increased communication and effective interaction between members of the sub-departments. He feels that the management team and quality circles will continue because "it is a good management tool."

MOBILE EMERGENCY MEDICAL SERVICES: AMBULANCE

The MEMS management team is composed of the department director, assistant director and two supervisors, with the quality circle administrator serving as facilitator. The director and assistant director serve as facilitators to circles in nursing and radiology. The supervisors lead circles among the dispatchers and emergency medical technicians.

In contrast to the two previous examples, the MEMS team was formed before any of its members had attended leader-facilitator training and before any circles had been formed in the department. At the time, in November 1984, the quality circle training program had not yet been developed and only one circle, CAT Scan, was active. In addition, it was set up with the specific objective of developing a long-term marketing plan for the department.

The team meets once every two weeks, in the late afternoon, in a training room away from the office. The meeting itself is relatively unstructured, with little or no differentiation between leader and member. Discussion is open, extremely frank and often quite heated.

The team meeting is, at the same time, a regular staff meeting. It usually opens with a discussion of pressing departmental matters and, once these are covered, turns to the basic long-term issue of how best to provide ambulance service, both emergency and transport, to the service area. This topic has led to a number of intermediate projects.

1. **Departmental assessment**

   The team systematically studied the ambulance market in Jefferson Parish. In the process, the members developed tracking systems that had not previously been in place -- a system to accurately guage the department's share of business in the market and its contribution to the hospital's overall business.

2. **Development of departmental plan**

   As they progressed through the assessment process, the members realized and documented the degree to which their business was both threatened by newcomers to the market and challenged by new opportunities. Immediate action seemed imperative. To deal with the situation, they devised a plan and presented it to their administrator and, then, to the chief operating officer.

   Although the plan was never wholely accepted by the hospital, their data-collection system and increased understanding of their business and their position in the local market have greatly assisted the members of the team in responding to a number of rapid and radical changes in ambulance service in the area. These changes include the introduction of 9-1-1 emergency call system, introduction of a computer aided dispatch system, a challenge and then withdrawal of a major national ambulance service and the opening to public bid of a contract for ambulance service in one of the municipalities formerly served by East Jefferson MEMS.

3. **Continuing work on departmental plan**

   The team continues to struggle with the issue of matching ambulances and personnel to the demands of the market in the most effective and efficient way possible while simultaneously, meeting the hospital's obligations to local municipalities.

Finally, the department director reports that the management team has made better managers of all its members. It has helped them to identify and compile relevant information, to clarify issues in terms of the data and to take action on problems over which they have control and live with those problems they do not control.

GENERAL OBSERVATIONS

Management Team Meeting Versus Staff Meeting

In some cases, such as the 6E AUD and MEMS management teams, the distinction between team meeting and staff meeting becomes blurred. This is both understandable and, perhaps, desirable, especially where time to meet is at a premium.

However, a strong case can be made for maintaining a clear distinction between team meeting and staff meeting, as is done in the Materiel Department. Two separate arenas provide both director and supervisors with the option of handling issues either by direction -- in a staff meeting -- or by consensus -- in a management team.

The choice benefits everyone. Neither department director nor supervisors have to feel obligated to deal with everything through consensus decision making. Nor must they deal with all issues in a directive format. They can consciously and willfully fit the process to the issue.

Management Team Versus Quality Circle

The boundary between a management team, led by a department director, and quality circles led by supervisors, maintains itself naturally. As evidenced by the representative lists, the projects management teams undertake involve what we would style "management issues" as opposed to "work group" issues. None of the three management teams shows any tendency to co-opt circle projects.

Team Of Circle Leaders

The opposite to co-opting circle projects is forcing projects upon them. There is no evidence of this in the brief histories presented above. There is, however, evidence of a subtle and important possibility inherent in a management team: the exercise of leadership in the selection of circle projects.

On at least one occasion, in the Materiel Management's project to keep the receiving time to three days, a problem and goal specified at the management team level was carried out at the work group level by a quality circle. The key link, of course, was the supervisor who translated the goal (decided on as a member of the management team) and, in his role as circle leader, motivated his employees to take it on as their project and find ways to attain it.

As suggested by the linking of team and circle projects in the Materiel Department, a management team is the key with which to bring work group goals and activities into harmony with department goals through quality circles.

Arena Of Measurement and Integration

Measures of the success of a department's "business" are accumulated, analyzed and integrated at the director level. Not surprisingly, then, management teams appear to focus their attention on these measures, especially those related to staffing.

Signs of this are apparent in all three management team project lists. The Materiel team is establishing output measures for each sub-department, as well as goal statements and job descriptions. The MEMS group struggles continually with staffing strategies as a compromise between statistical need (as they measure it) and actual obligations to specific municipalities. Even the 6E management team has sought more adequate systems for measuring the performance of nurses.

These projects suggest also that this is an appropriate level for introducing sophisticated management measures such as statistical process control, statistical quality control, labor productivity measures, and so on.

Management Team Leadr QCs

After an initial period of intense activity, many circles decline as their list of "problems" diminishes. Continued activity depends on guidance and leadership by supervisors in more sophisticated areas of work improvement that are not readily apparent to members. These include work simplification, SPC and SQC, problem prevention, work redesign, product redesign, self-management, etc.

The appropriate level at which to introduce and develop these skills is departmental, among directors and their supervisors. As they apply such things as SPC to their own efforts, they signal their importance, model their use and set the stage for leading employees to utilize the same techniques at the work group level in their circles. And, since supervisors participate in creating the systems at both levels, the results are properly integrated with departmental systems and goals.

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BIOGRAPHICAL INFORMATION

Philip C. Thompson, Ph.D., is Administrative Assistant for organizational development at East Jefferson General Hospital in Metairie, Louisiana. He was formerly Coordinator for quality circles (Systems Refinement Teams) at Martin Marietta Aerospace, Michoud Division. He is author of *Quality Circles: How to Make them Work in America* and numerous articles on the quality circle process and employee involvement. He has served as a member of the Board of Directors, secretary of the Executive Committee and chairman of the Publications Committee of the I.A.Q.C.

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H: Leading Edge Programs

Systems Refinement Teams: Organizational Adaptations to Quality Circles at Martin Marietta Michoud Aerospace

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It is often pointed out that quality circles must undergo continual readjustment if they are to become a part of the normal life of the organization. In fact, the process is one of mutual adaptation. Circles must adapt to the particular features of the company while the organization itself must make changes to accomodate the circle process. This presentation discusses the adaptation of the circle process known as "systems refinement" at Martin Marietta Michoud Aerospace. During a period of eight years the systems refinement process has undergone significant change as new team structures were created and new training programs were developed.

In 1978, Martin Marietta's Michoud Division initiated a number of employee motivation programs. The perceived need at the time was to change the negative impact of employee attitudes on performance. The following year a quality circle program known as "Systems Refinement" was created to address this concern at the work group level. Growing from six teams in 1979 to 100 teams six years later, the program has done more than improve employee attitudes; it has made a significant contribution to the safety, quality and productivity of the External Tank Project. This presentation will discuss one aspect of the Quality Circle program - the structural adaptation of Systems Refinement Teams to the Michoud Aerospace organization. I will discuss how the organization adapted to Systems Refinement Teams, as well as how the teams changed as they molded themselves to the organization's structure. When I use the term structure, I refer to the formal and informal pattern of relationships within the organization. The Production Operations department is an example of a formal structure, while a bible study group with its fluid membership is an informal structure.

Background

Under the contract from NASA, Martin Marietta operates the Michoud Assembly Facility (MAF), an 843 acre industrial area located in eastern New Orleans. At this location Martin Marietta assembles the External Tank for the Space Shuttle program. The tank carries the liquid propellants required to boost the shuttle into orbit and is the only component not reused on the space transportation system. The Michoud Assembly Facility was chosen for its direct access to the intercoastal waterway, which facilitates shipping the large tanks to the Kennedy Space Center in Florida. The facility also contains a 43 acre factory, one of the largest buildings of its kind in the United States.

In 1985, the assembly of the 154-foot External Tank involved over 4,000 employees in a three shift operation. In that year, nine tanks were produced, however, NASA requirements call for 20 tanks by the end of the decade. Assembly processes include welding, mechanical assembly, thermal protection, electrical installation and testing.

As background to the development of a human resource strategy it is necessary to examine the uncertainty which existed when the program was initiated. In 1978, Martin Marietta began the assembly of the External Tank test articles. While the workforce was drawn from southern Louisiana and Mississippi, the management team was imported from the Denver Aerospace Division of Martin Marietta. Management brought with them an engineering culture and a strict functional structure. Given this orientation, a new workforce and original work processes, there was considerable conflict. Management was faced with two related problems: how do we manage a new manufacturing process and how do we manage the relationships between work groups in the course of carrying out these processes? The first involved the technical problems of taking the project from design to actual build. The second problem was intimately tied to the first and concerned the coordination of the activities of many work groups and entire departments. The organizational structure put seven constraints on how these activities should be coordinated.

A human resource development strategy was developed in 1978 to address some of the conflict which had surfaced. Management focused on the hourly workforce. They used such indicators as the rate of grievances, safety incidents and accidents, and hardware non-conformances. However, the most telling indicator that a serious problem existed was an attrition rate of 55% among hourly employees (33% overall). A newly created HRD department initiated a number of programs, including awards and recognition, a suggestion system and a zero latent defect program. In 1979, the first Systems Refinement Teams met.

The typical Systems Refinement Team is composed of eight to twelve employees from the same work area. Membership is voluntary and individuals can join at any time. While the supervisor is viewed by the program as the "natural" team leader, in many cases an employee takes this role. Leaders are trained in a three day course, while members receive one day of training. The courses cover problem solving techniques, group interaction, communication and leadership skills. Teams meet for one hour each week on company time. For the most part, teams choose their own projects. Upon completing work on these projects, they make formal presentations to their management to have them implemented. Structurally, Systems Refinement Teams are quasi-formal. There are no organizational charts that define teams within the larger organizational structure. In this regard, it is interesting to note that a Standard Procedure defining the scope and responsibilities of teams was not published until 1985.

Structure

There are some structural features of Michoud Aerospace which are relevant to this discussion. An organizational chart shows both horizontal and vertical differentiation. Horizontally, the organization is cut into a number of major functional departments which include Engineering, Production Operations, Product Assurance, Materiel and Facilities. These are further divided into sub-units. Overlaying the entire organization is a vertical hierarchy with as many as five levels between the General Manager on top and the workers on the bottom. Executive management is composed of the Division Vice-President, the General Manager and his staff, and the Directors of all functional departments. Middle management includes the Manager and Chief/General Foreman positions. The Foreman and Assistant Foreman make up "First Line" supervision. Relationships between these levels are characterized by what is termed "chain of command", a military analogy which conveys the authority at the upper end of the hierarchy.

The operation of each department, while relatively autonomous, is structured by formal procedures. Such procedures formally structure tasks and are specific to each department. For example, in the Production Operations department these procedures are called "Standard Practices". Because these procedures draw a boundary around behavior within the department, they make it difficult to coordinate action between departments where no procedures exist.

Each functional department is further segmented into sub-departments led by individual managers. The relationships within departments can be described in terms of the structural distance between positions. For example, within the Product Assurance department, the structural distance between managers is relatively short. They interact formally within the Director's staff meeting on a weekly basis. However, *the further* down the hierarchy one travels, the greater the structural distance between individuals of equal position. In the Product Assurance department, for example, the industrial hygienist has virtually no interaction with the chemist in the Quality Evaluation Laboratory. In the discussion that follows, I will show how this structural distance was reduced by one kind of Systems Refinement Team.

Systems Refinement

The Quality Circle program at Michoud Aerospace has gone through four recognizable stages:

Pilot	1979 - 1981
Support Systems	1981 - 1982
Phase III	1982 - 1985
Institutionalization	1985 - 1986

The objective of the pilot stage was to demonstrate that quality circles could operate within the organization. Upper management saw the team as a means of improving morale and motivation with a concomitant effect on quality and productivity. Ideologically, the program was framed within the philosophy of participative management. Six teams were formed in the first year. Of these, the most structurally unique was an intercompany team with Avco Aerostructures, a major subcontractor.

In the second phase, the HRD department set out to develop organizational support for Systems Refinement Teams. It soon became apparent that for teams to be effective they needed a network of support within the facility. The department also studied the impact of teams in terms of organizational performance measures. By 1982, the program had expanded to 48 teams and had made 68 management presentations. It was during this phase that a new team structure appeared-the "integrated" team.

In both of these phases, the emphasis was placed on building teams from the bottom of the organization. Little effort was made to develop middle management support. Phase III was a major effort to address this by initiating management training on a departmental basis. The director of each functional department and his managers was trained in the team process and a plan developed to train all middle managers and front line supervisors in the department. The objective was to transfer ownership of the teams from the HRD office to their respective departments.

To its credit, the HRD department trained the directors and middle managers of six departments during Phase III. In each of these departments a team implementation plan was developed and an advisory and support committee established. A new team form was proposed - the management Systems Refinement Team, composed of the director and his managers. One such team was formed in the Product Assurance department. However, after three years the effort to form and maintain teams remained with the HRD office. In late 1985, the facilitators and their management met to refocus their efforts on institutionalizing the SRT process. "To make teams a part of the way we do business" had been a program goal since the Pilot phase. Three objectives were set to accomplish this: promote self-facilitating teams; retrain leaders, recorders and members; and develop a consultative relationship with management.

Integrated Teams

Variations of the Systems Refinement Team structure have included the intercompany team, task teams, management teams and professional teams. The integrated team represents a team variant which arose in response to the rigidity of a mechanistic organization. The first integrated team, the Integrated Weld Quality Improvement team, was formed in 1981. The NASA Quality representative took note of a concern that arose on the production floor. Production welders pointed out that they were unable to make necessary adjustments during welding due to control of the weld parameters by the Manufacturing Engineers. Their contact with the engineers was limited to a brief meeting to get the "go ahead" to weld. There was no formal mechanism to change the procedures. The NASA representative took note of these concerns and recommended to the HRD office that a special team be formed to address this and related problems.

The HRD office recognized that this problem crossed departmental boundaries. The resulting team drew its membership from Tank Fabrication, Manufacturing Engineering, Quality Control, Quality Engineering, Tool Engineering, Advanced Manufacturing Technology, NASA and the government auditing agency. As their first project, the team had the weld parameters opened to allow for greater control by the welder. Following this the team established a systematic training and certification program for all production welders.

Initially, it was the presence on these teams of customer and government representatives that caused them to be termed "integrated". However, it was soon recognized that the membership from Martin Marietta was drawn from different horizontal levels, as well as from different departments. For example, the members of the Integrated Weld Quality team included an hourly production welder, a quality control supervisor, the general foreman of welding and a chief manufacturing engineer. This vertical mix gave the integrated team greater authority than a work group team and allowed it to work solutions with a greater potential for approval.

In 1984, a new integrated team was formed to address problems identified by the Product Assurance Quality Lab. The Integrated Environmental Management team was formed by a lab technician who was frustrated by the improper collection on waste water samples. After trying to solve the problem within her department, she realized that direct communication with the Facilities Maintenance personnel was necessary. Product Assurance Procedures governed the sample collection process. However, these procedures did not apply outside of the department. Formal communication with Maintenance personnel required the information to go up the Product Assurance chain of command, cross over to the Facilities Department's management, and then proceed down to the waste water treatment operators. The problem and its solution was "betwixt and between" the structure, a condition that Victor Turner calls "liminality".

The Environmental Management team drew its Facilities membership, not only from Maintenance, but also from Environmental Management, Project Management and Maintenance Engineering. The Product Assurance membership was drawn from the Quality Laboratory and the Safety Department. After addressing the initial communication issues, the team went on to develop a series of procedures governing sample collection and handling. These informal procedures have been implemented by the waste water treatment operators since they were developed by the team. The team also developed a training package on the procedures and trained all operators. Presently the team is seeking to have this course certified and taught by the Training Department.

Integrated teams have encountered resistance from middle managers who see these teams invading their turf. At a recent management presentation by the Integrated Environmental Management team, a Facilities manager challenged the team's plan to work on new environmental management procedures. When asked the reason for his objection, he responded that, "The SRT is stepping out of its bounds". As they are defined by management, teams have a very limited purpose - to provide a one hour forum for problem-solving. While this would clearly be the case for a traditional Systems Refinement Team, the boundary of an integrated team is not as clear. It was a fact that the highest position on the Environmental Management team was supervisor. However, the team recognized that there was no one in management responsible for the interdepartmental procedures. This area was unbounded and ill-defined by the organization.

Conclusion

Management introduces quality circle programs for a variety of reasons. In some cases, where production processess have been standardized, improved productivity is often the goal. In other cases, as at Michoud Aerospace, management does so to improve employee morale and motivation or maintain product quality. Quality circles also provide many secondary benefits. In large hierarchical organizations, teams promote decision-making at lower levels of the organization. Teams develop problem-solving and leadership skills in employees. At the same time, they provide a "safety valve" to relieve pressure among workers by channeling conflict to a more acceptable forum, the team meeting.

In this presentation, I have emphasized how teams create lateral linkages in highly structured organizations. The team is a quasi-formal device which provides flexibility in a rigid structure. Given the possibility of having teams in the organization, and given their open structure, there was considerable experimentation with team form. In the two cases which I have discussed, integrated teams were used to make decisions affecting departments which lacked formal inter-departmental procedures. Individuals found gaps in the organization and sought to fill these gaps using Systems Refinement Teams.

An Experience in Mainstreaming the Participative Process: Ownership and the Steering Committee

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Quality of work life efforts directed at higher levels of participative management in the workplace cannot be delegated if we sincerely want results. With this in mind, our presentation will focus on our experiences with the formation of a joint union-management QWL steering committee in a UAW represented manufacturing plant.

Specifically we will cover why the QWL steering committee was needed, who was involved, how it was formed, how we got the approval, what its objectives and responsibilities are, and changes since its inception.

When our participative efforts began five years ago, our approach was not unlike many others who were anxious to "get started" in a process that was, somewhat, mandated by upper management but also held promises of improved relationships and performances in the workplace.

With an agreement between the UAW and GM on the value of such efforts and that these efforts should be jointly implemented, we began what turned out to be a needed change effort laden with successes, failures, frustrations, mistrust, and the frequent questions of "Is it worth it?" and "Who's in charge?".

INITIAL ACTIVITIES

After Union and management Coordinators were selected and trained, they were given the responsibility of giving orientations to the workforce and conducting team training and facilitator skills workshops. During the orientations it was always made clear that participation by anyone (Union or Management) was voluntary.

During this time over 800 employees were trained and 100 plus Employee Participation Groups (EPG) were formed primarily in the manufacturing areas (about 20% of the workforce). Attendees at these training efforts were primarily hourly rates and the first line supervisors. Occasionally we had general supervisors. On less frequent occasions we had a superintendent participate. As the employee teams came on stream the coordinators were responsible for their health and operation.

THE GRENADE LOBBING STAGES

As time passed, we began to realize that we had put together a program and a process with the best intentions, but that two major circumstances were starting to develop:

--First, the employees and the managers were both looking at this adventure in Participative Management as a significant failure (albeit they recognized there were some successes and growth along the way) but from two different perspectives.

From the MANAGEMENT side, we were hearing:

*We are losing production by allowing out people one hour per week and we are forced to work overtime to make it up.

*We need more bang for our bucks. We are not seeing any real savings for our expenses.

*We have turned the asylum over to the inmates. Participation has turned to permissiveness.

*Where are the team minutes? We need to know what they are doing. Don't they trust us?

*Teams are goofing off, reading newspapers, playing games, and not getting any results.

*Teams are dying, quitting, and losing interest.

*Teams need to work on more meaningful projects. (Not floorboards, water fountains, break areas, fans, etc.)

*What are "they" working on? "They" are not telling us. "They" are not communicating.

From the EMPLOYEES' side, we were hearing:

*We want to make a contribution but we need help.

*We are looking for projects but no one from management is offering ideas.

*We are asking for more knowledge about the business (How it is run, what are the objectives, what are out capacities, is our quality program effective, etc.) but with little or no feedback.

*Water fountains are getting boring.

*We have submitted some good ideas but those that have been approved seem to be stonewalled.

*We are looking for management visibility and support.

Essentially, each side was saying the same things but from a different perspective and they were saying them to us, as coordinators, but not to each other, at least not on a formalized basis.

--Secondly, in the midst of all this verbage and discontent (with both sides ready to forfeit or even fight) we found ourselves as Coordinators being the sole owners of the process (or what was left of it).

KEY ISSUE

And that was the key issue. With ownership in the mainstream of the organization, the needs of both sides could be discussed jointly and dealt with, the content issues could best be resolved, and relationships could be established by working through trust barriers. Instead, the ownership was in the hands of the Coordinators and we were looking at the last dying gasps of a change effort designed to establish those values so needed in our workplace.

THE STEERING COMMITTEE

During the 1984 UAW-GM negotiations, the stage was set for a more comprehensive set of guidelines that would enable each plant location to successfully develop a truly joint participation process. Included in these guidelines was a statement on the values and ethics inherent in any successful process, guidelines for the makeup of a Quality of Work Life Steering Committee, and the functions of that committee.

VALUES AND ETHICS

*Recognition of the right of workers to participate in decisions affecting their working lives.

*Acknowledgement of the worth of all individuals and their right to be treated with dignity and respect.

*Recognition that workers are a valuable resource, in mind as well as body.

*An atmosphere of trust and openness.

*Encouragement for individuals to maximize their human potential.

*Providing avenues for individual growth and development.

GUIDELINES FOR MAKEUP OF STEERING COMMITTEE

*A coordinating body to guide the process --not a problem solving group.

*Membership of six to twelve.

*Appointments to positions equally shared by Union and Management.

*Selection criteria: ability to work with others, credibility with both groups, understanding of their organization, and committment to Quality of Work Life goals.

STEERING COMMITTEE FUNCTIONS

*Establish short and long term goals to achieve through the QWL process. The QWL process defined as:

- A strategy to achieve business objectives
- A philosophy of work
- Labor-Management partnership
- Employee involvement in job related problem solving and decision making
- Joint efforts to improve organizational efficiency, job security, and the quality of people's work experience
- A work group concept for now and the future.

*Develop and monitor budget:

- What is current budget?
- How do we best utilize it?
- What are our future needs?
- What should be budget for next year?

*Develop and maintain communication systems

- Between teams
- Between shifts
- To Upper Management and Union Leadership

*Diagnosis of the organization

- Is process making a difference?
- Are there teams that need help?
- How are we doing with respect to our goals?

*Establish and maintain an implementation plan such as:

- All decisions are joint
- Decisions by consesus
- Leadership is shared in all problem solving groups
- Awareness for everyone in the plant
- Provide environment for maximum participation

*Ensure separation of Collective Bargaining Process and QWL

- What teams can (cannot work on

*Assess and identify training needs such as:

- Awareness needs
- Communication skills
- Group development
- Presentation skills
- Meeting skills

TRANSITION FROM GUIDELINES TO LOCAL APPLICATION

The first step toward mainstreaming the participative process was to get all the different parties together: the Union, Upper and Middle Management, and the hourly-rate EPG leaders. The method chosen was an eight hour offsite leadership conference.

A proposal was presented to both the Union leadership and the Plant Managers. The Union leaders understood the need and readily agreed, but, due to the past history of EPG, Management resistance was more difficult to overcome. The Coordinators held a meeting with Union and Management leaders and an agreement was reached to have the leadership conference.

The Coordinators then designed a workshop with the objective of coming away with Steering Committees for each plant. The conference was attended by 260 Managers, Union officers, EPG leaders, and guests from the International UAW and Delco Remy.

The Union Officers and Managers from Delco Remy's magnaquench plant, Anderson, Indiana made a joint presentation of the success of their QWL process in turning a dying Division of GM into a progressive growing one. Their Division had gone from 15,000 employees to 4,000 before their QWL efforts revived employment back to 8,000. Simply stated, their message to us was: "Don't wait until your jobs are on the line before you do something to involve your entire workforce."

The International UAW representative informed the participants of the role of the International Union in the QWL process and the resources available to hlep in implementing joint processes. She also admitted that sometimes EPG must die for something better to evolve. This was a remarkable statement coming from a former local Coordinator who had been in the EPG process from its very beginning.

The second half of the leadership conference was spent dividing into respective plant groups. Skilled trades formed their own group. A Coordinator served as a facilitator. The objective was awareness of the process at Delco Moraine. The facilitator had his group analyze why the present EPG process was failing. After leading the group through the Present-Future State Model, the Coordinator/Facilitator led the group through a discussion on the need for some method to help achieve and maintain the QWL process. As a result, the groups decided to form Joint Steering Committees.

After the leadership conference, the Coordinators quickly organized meetings to populate and define operating structures for each plant Steering Committee. The Coordinators recommended that the Plant Superintendent and the Zone Committeeman be the first two members of the steering Committee. Other members were appointed equally from Union and Management.

With the Steering Committees populated,

the Coordinators then designed an 8 hour offsite and facilitated team building and training based on the guidelines established in the 1984 GM-UAW Agreement. The Steering Committies were then ready to take over the QWL process with the Coordinators serving as consultants and trainers.

DIAGNOSIS OF THE ORGANIZATION

One of the main functions of the Plant 4 QWL Steering Committee was to diagnose the organization. Early on we recognized that we should focus on QWL for all employees. The process in place at that time, Employee Participation Groups, only involved about 20% of the hourly work force and almost none of the salary employees. A review of EPG minutes showed the Steering Committee that there was a lack of follow up on team projects, lack of management support and participation, and a general lack of interest in EPG.

As a Steering Committee, we looked at several options:

1. Let EPG's die
2. Visit the EPG teams
3. Provide assistance in forming work groups or root cause (problem solving) teams.

In the end all three options were used. However, in the beginning a team of one salary and one hourly members of the Steering Committee visited the EPG teams. The teams were notified of the Steering Committee's existence, membership, and desire to help the EPG teams. The main concerns of the EPG teams expressed to the visitors from the Steering Committee were the lack of communication resulting in knowledge imbalance and the frustration of not being able to accomplish anything.

IMPROVING COMMUNICATION

In earlier Steering Committee meetings, communication had been targeted as the main area to concentrate on. About this same time several Steering committee members attended a seminar sponsored by the Dayton IAQC. The subject of this seminar was self-managing work teams and the guest speaker was Dr. Michael Donovan. As a result of this seminar, it was decided to combine better communications and the work groups into communication teams.

Delco Moraine had been instructed by General Motors to hire outside consultants to study the division's competitiveness as a world-wide automotive brake producer. In February, 1986, the entire work force was assembled to hear the consultants' initial report. Then in April, each individual plant had their Infonet (as they were called) meetings conducted by the respective Superintendents. June brought a series of meetings by departments with the General Supervisors sharing concerns about their area. The next logical step in PLant 4 seemed to be the formation of the communication teams. There was a thirst for knowledge of the business caused by the earlier reports and meetings. The Steering Committee saw this as the perfect opportunity to communicate the information to the workers that would help them make decisions about their workplace and help the division become more competitive.

TRAINING NEEDS AND IMPLEMENTATION

The Steering Committee realized from the diagnosis of the EPG process that the workforce would need team training if Communication Teams were to fare any better than EPG. Since the National Agreement between General Motors and the UAW placed the Joint Local Committee as QWL overseer, the Steering Committee decided to report to them our findings and ask their blessing to change from EPG to Communication Teams. This Joint Local Committee was supposed to be comprised of the two plant managers, the union president, and the chairman of the union shop committee. We soon found that, in the case of Delco Moraine, this committee was made up of fourteen instead of four and that they represented a cross section of union and management staff. The presentation to the JLC included:

1. Proof of need for change
2. Formation of Communication Teams
3. Avantages over EPG
4. Need for training.

It had been the intention of the Steering Committee to make the training and attendance at the communication team meetings mandatory. However, this was struck down by the JLC.

After getting the blessing of the JLC, the Steering Committee decided to share the same presentation with the supervisors of the hourly workers. Since the supervisors had not been, for the most part, participants in EPG and since they had not seen much results from the EPG process, they were not overly enthusiastic about a new process, but they cooperated with the Steering Committee very well.

The QWL Coordinators formulated a training model and agreed to serve as facilitators with the groups they trained until the groups were able to assume this responsibility. The Steering Committee then submitted a training request for $56,000 to the Joint Training Fund to cover the wages of the 400 hourly employees for the eight hour offsite training. On top of this, Plant 4 picked up the tab of an additional $1,500 to cover the training site and refreshments.

Training was conducted during regular shift hours in 14 sessions in a 10 day period in August by the 6 QWL Coordinators. Representatives of the Steering Committee met with each training session to state the purpose of the training, to answer any questions of the trainees, and to request that the old EPG groups cease meeting while training and Team forming was being conducted. Later one of the more successful EPG teams asked if they could continue to meet on their own time. The Steering Committee agreed to this reasonable request.

CFIT PROCESS BEGINS

In September, the Communication Teams began to function under the acronym CFIT, standing for Communication For Improvement Teams. Minutes and feedback from the QWL Coordinators showed that there was about a 95% participation and the interest level was high. Originally, it had been intended to structure the meetings with 5 to 15 minutes of formal information sharing by the supervisor dealing with production schedules, product cost, quality, budgets, and visitors.

Then the remaining 45 to 55 minutes would be of a less formal nature allowing for reports from team members, sharing of group concerns, or breaking into smaller work-related groups. However, the Coordinators and the Steering Committee noted that some of the teams still required more time to work with the Coordinators on team building skills. Each team was polled to ascertain what type of information it desired. The Steering Committee then made transparencies available to each supervisor to share with his CFIT team.

As the Teams selected officers (leaders, recording secretaries, and chart recorders), guidelines, and agendas, it was noted that some teams were more advanced than others. As soon as a team was ready to function independently, the Coordinator relinquished his role of facilitator and concentrated his efforts on the teams that needed him more. He was still available, as needed, for consulting with the stand alone groups.

One hourly and one salary members of the Steering Committee agreed to monitor minutes of the 14 CFIT meetings and report to the whole Committee if there were any major problems or accomplishments.

RESULTS

Now, through the CFIT process, the ownership was in the mainstream of the organization. The hourly rate employees and their first line supervisors were meeting weekly to communicate about the business. As was previously stated, the participation was about 95% compared to 20% previously and now management was involved so trust barriers were coming down as working relationships were established. General Foremen and the Superintendent were regular attendees and participants in the new process.

Shortly after the formation of the CFIT teams, a vote was held on an entirely new work contract that could mean Delco Moraine Dayton would receive General Motors' Anti-Lock Brake business. Union and Management members of the Anti-Lock Brake Concept Team made numerous presentations at the requests of the CFIT teams who wanted to know all they could to make an intelligent decision about their future. The contract was accepted and the highest positive vote area was Plant 4 where the CFIT teams were functioning.

CFIT teams have also made great strides in the area of Synchronous Manufacturing. A subassembly area now manages by sight. If there is one day's worth of subassemblies ahead of the assembly lines, the subassembly employees work elsewhere. Subassembly inventories have decreased from seven days to one. Teams are investigating a U-cell for service parts of low volumes that are not practical to run on the assembly lines.

A Resource Center was created in a vacant office. It is always open and is stocked with information on product costs, product displays, vendor contacts, customer complaints, blue prints, trade magazines, and new product development.

Each CFIT team has reprensentation on departmental business teams, customer quality teams, and vendor quality teams. These teams initiate contacts with vendors and customers to discuss problems brought up in CFIT meetings. Customer and vendor responses have been very positive to this direct approach. This is a realistic demonstration of ownership being accepted by the mainstream.

CONCLUSION

With ownership in the mainstream of the organization, we have now answered the questions -- "Is it worth it?" and "Who's in charge?". The process seems to be alive and well at Delco Moraine Plant 4. However, the Steering Committee will continue to monitor the process and aid the participants.

BIOGRAPHY

Mr. Birkholz was a QWL Coordinator for 2½ years. He served as a consultant, trainer and facilitator when the Steering Committee was developed.

He is now serving as a Manufacturing General Supervisor in the area CFIT teams are functioning.

His education includes a B.S. in Management and a MBA from Miami University in Oxford, Ohio.

Mr. Gibson has served as a QWL coordinator for 3 years. He also was a consultant, trainer and facilitator to the Steering Committee as well as the CFIT teams.

His education includes courses at Sinclair Community College, UAW sponsored seminars, and various University Associates conferences.

Mr. Fox has been a Member of the Steering Committee since its inception. He is a Manufacturing Data Analyst now after serving as a Production Supervisor for 13 years and an EPG facilitator for 1 year. He holds a B.S. in Industrial Management from Purdue University and a MBA from the University of Dayton.

"The Evolution of Quality Circles into a Total Quality Improvement Strategy"

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Abstract

A major program which has been underway in Merrill Lynch Operations since 1981 is Quality Teams. The objective of the program is to improve productivity and service through employee involvement. However, this effort alone could not result in improving total performance. It was necessary to establish a Quality Improvement Strategy to provide a common direction for the entire Division. This strategy would focus on improving quality in everyday operations and involve all levels of the organization.

Introduction

In 1986, Merrill Lynch's Quality Circle Program, known as Quality Teams, celebrated its fifth anniversary within the Firm. Through this program, Merrill Lynch employees have been given the opportunity to develop and utilize a wide range of skills.

From the outset, enhancements to the program have been continually made. For example, we introduced Goal Setting to the process which brought the departmental plans and objectives down to the clerical levels. It enabled line management to actively direct and assist teams in aligning their projects with specific objectives. The Goal Setting Process was a key element in establishing a strong partnership between middle management and the team members.

Presently, our Quality Teams Program is made up of 125 teams with approximately 1,000 participants. Quality Teams is proud of the fact that participation within the program has continually broadened.

As evidence of this growth, upper management has been committed to and supportive of the team process. Through documented savings, improved levels of efficiency and increased job satisfaction, the Quality Teams Program has provided employees with a forum to improve their performance levels within the organization.

Evolution

Although the Quality Teams Program was a success, we began to realize that measurable improvement efforts were restricted to the team population.

It was apparent that the teams' efforts alone could not result in improving total performance levels.

We face increasing competitive pressures to deliver the highest quality service at the lowest possible cost. To meet this challenge, it was necessary to develop effective plans for improving organizational performance.

For an improvement effort to be successful, it must integrate quality goals, productivity measurement and employee involvement. It must attempt to ensure that quality improvement would become as natural a process within the organization as the yearly planning and budgeting processes.

In addition to Quality Teams, there existed Training and Performance Measurement Programs. Similar to Quality Teams, these programs focused on the development of employee skills and awareness in order to increase productivity. These areas were supporting common objectives but were not working hand-in-hand to sharpen the focus on quality improvement. Thus, the establishment of a Quality Improvement Strategy is an effort to bring these resources together.

Quality Improvement Strategy

The Quality Improvement Strategy was formulated in 1986. It developed a framework for programs such as Quality Teams, Training, and Performance Measurement. Utilizing efforts that were already in place, the strategy strives to provide employees with the focus and skills necessary to achieve measurable improvements. It allows management to identify barriers to productivity and quality improvement that exist.

We will use the following equation in an attempt to explain the intent behind the Strategy:

Define Vision +	Build Skills =	Improved Organizational Performance
- Management Leadership - Quality Awareness - Communication	- Improved Management Training - Team Problem Solving - Measurement	

The major components are as follows:

1) Management Leadership - Management will develop a clear definition of quality, productivity and service as it relates to the organization. By active participation and support of the Strategy, management demonstrates to their employees that quality improvement is a high priority within the organization.

2) Quality Awareness - Quality Awareness will be promoted throughout all levels of the organization. It serves as the vehicle to raise everyone's awareness about the organization's improvement needs. All managers should attend Quality Awareness Seminars so that they will receive the necessary resources to motivate employees to work each day to the best of their ability.

3) Communication - It is important that the employees be kept informed of the specific progress of the Strategy. This can be done through quarterly Newsletters and monthly clerical breakfast meetings between management and the clerical employees.

4) Management Training - Training Programs will be enhanced so that they prepare managers to direct the development and performance of their employees.

5) Team Problem Solving - The team process will be applied to all levels within the organization. It should utilize the existing team structure and techniques to focus efforts on key quality goals.

6) Measurement - In an effort to create a partnership between quality and performance, a performance measurement system will be implemented. We are currently using a program known as PRIDE (Performance Reporting Improvement and Development Effort) within the operations area.

Conclusion

The Quality Improvement Strategy will establish a system to improve quality as part of everyday operations. It will focus the Division's efforts on providing management and their employees with the skills they need to achieve measurable gains. The roles and responsibilities of managers as well as the employees will be clearly defined. Management will be provided with the resources to not only manage the day-to-day operations but to also establish and communicate clear goals and objectives. The Strategy will develop an environment where teamwork and employee participation is encouraged.

Once implemented, the Quality Improvement Strategy will involve everyone in the pursuit of quality improvement. Ultimately, this will create a true partnership between quality and performance.

Biography

George F. Mugno joined Merrill Lynch in 1961 as a clerical trainee in OTC Operations. During his 25 year career with the firm, George has held various managerial positions. He is currently responsible for Futures, Custody and Equity Operations. George initiated and implemented Merrill Lynch's first pilot Quality Circle Program in August 1981. Since that time he has continued to guide the process and has been instrumental in its continued growth.

George was a presenter at the 1986 IAQC and his topic was "Translating Management Support Into Action". George is also Chairman of the New York Chapter of the American Productivity Management Association.

From Cubes to Circles: R&D Engineering Circles

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A question generally raised by Quality Circle members at one time or another is "If Circles are such a great thing, how come the guys upstairs don't have some?" In industrial, service, and support organizations this is a particularly valid question. But what about a research center where virtually everyone is "upstairs?" Through the presentation of case histories and examples, the dynamic benefits of Circle activities will be explored within a research center. Not only with the support personnel, but with research scientists, physicists, engineers, and technologists. The emphasis originally embraced by Quality Circles was to unleash the creative powers of the work force. This presentation will explore what happens when this is applied to a work force whose primary function is already creativity.

Throughout the United States and the world, quality and productivity improvement has become the central business issue of concern. Basic industry has found itself in a life and death struggle for survival. High tech, sunshine, and service industries are finding that the same pressures (both internal and external) that have been ravaging the smokestack industries for the past two decades are now at their heels. The facts and figures are everywhere, and no one's mail delivery is want for people and organizations espousing the latest techniques to improve quality and productivity.

Perhaps the most difficult task facing business today is how to deal with static productivity and relative unquality of American goods and services. At the Research and Development Division of Babcock & Wilcox (B&W) this has been the case. The question has not been "should we improve quality and productivity," the question has been "how?" This paper will focus on the five-year odyssey the R&D Division has taken to develop an overall process for dealing with quality and productivity improvement and more importantly, making it work.

Although this journey has encompassed a variety of techniques and processes, one process central to the overall program is our utilization of quality circles. At B&W our quality circles are called Participative Task Teams (PTT).

PTT began at the R&D Division in 1982 and is on-going to this day. The history of the program is described in Figure 1. As with most circle programs, PTT has had its high points as well as its low points. We are currently in a "renaissance" if you will, due to our success in integrating the process into our division's technical sections. Technical sections are comprised of scientists, engineers, and technologists, all of whom work on research projects for B&W operating divisions and external customers. We will discuss this breakthrough and its impact on the overall PTT process at a later point. For now we will look at the history of PTT which has lead to its dynamic impact on our laboratories as we have moved from the individual researcher's "cubical" to the broader cooperative "circle" within our technical sections.

THE HISTORY OF PTT

Many of the events that have occurred within the history of PTT are not unlike those of any other organization embarking on the implementation of quality circles. Therefore, in discussing the history of the PTT process at the R&D Division, we will focus on events that through our experience and interaction with our peers, stand out as being unique to an applied research environment.

First, a definition: what is the intended meaning of "an applied research environment." Unlike some organizations that have implemented quality circles into their engineering group(s), at the R&D Division, we have only two "engineering groups." Most of the organization is in support of engineering performed by our operating divisions. Therefore, the product that is produced is information, documents, designs, patents, etc.... Occasionally, a prototype is designed and fabricated, but only in support of a research project.

PTT received its impetus from a Babcock & Wilcox Company initiative begun in 1981. The initiative was in the form of a directive to increase productivity of all divisions to a specified level. In order to achieve a level of productivity improvement necessary on a company-wide basis, a committee was formed of "productivity coordinators" from all of B&W's operating divisions.

This committee did exhaustive research into what could be done to improve productivity not only on a company-wide basis but also on a division-by-division basis. One of their recommendations was to implement quality circles. PTT was first initiated at B&W within the Nuclear Equipment and the Tubular Products Divisions in September of 1978.

PHASE 1

By February of 1982, a pilot program was begun at the R&D Division with the formation of the Advisory Board (steering committee) and three "pilot" Participative Task Teams.

Following the "gospel" as written in the publications of the day, the PTT members were trained in circle techniques. However, early on it was realized that the purchased training materials used in this training were not quite right. These materials were designed for production facilities and not a research organization, but the materials were representative of what was available on the "prepackaged" market. Since the trainees in the pilot program came from support areas such as Metals Fabrication and the Machine Shop, the training material's reliance on manufacturing examples was not an insurmountable hurdle.

Possibly that which was most critical at this point to the success of the pilot teams as well as the teams later formed in Phase 2, was the driving support of the Manager of the division's Facilities and Quality Assurance Department. As has been said in numerous publications, the support of management is critical to a circle program's success. In our instance, it was also crucial to the start-up itself. The program needed a staff level supporter willing to budget the necessary funds to start the process and this manager gave that support at the program's inception and continues to be a staunch advocate today.

As time passed and the pilot program proved successful, the PTT Advisory Board undertook a study of PTT's future. The next logical step was to expand the program. By September of 1982, this expansion was underway.

PHASE 2

From the original three pilot teams, the program was expanded to sixteen teams. The thirteen new teams were also formed within support sections, such as Design Engineering, Administrative Services, Instruments Design, and Maintenance. Like the pilot teams, they also experienced substantial success.

For the next two years the PTT program experienced what has been described as a "honeymoon" period. All was going well, the teams were accomplishing many worthwhile projects, yet the Advisory Board knew that PTT had not achieved its full potential. The activities then underway were showing a substantial net return, but they were still confined to the Division's support groups.

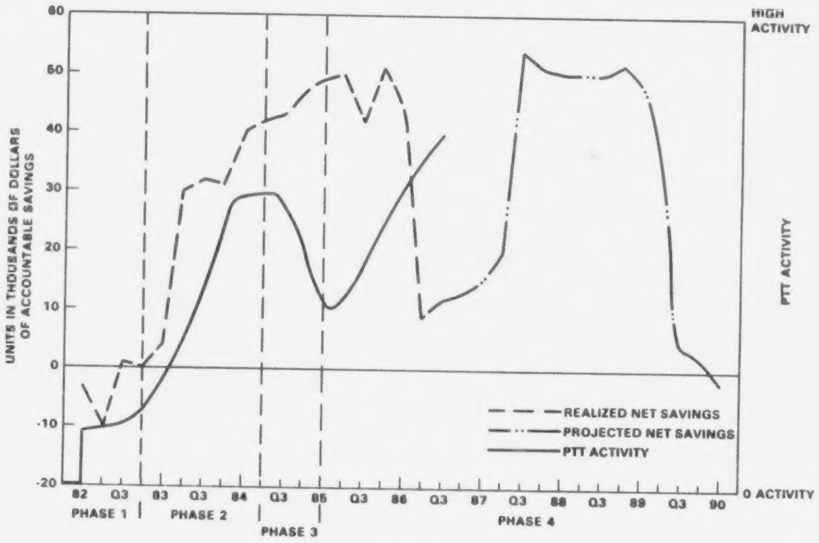


FIGURE 1

This diagram shows the phases the PTT process has gone through at the R&D Division. The phases are graphically represented on Figure #1 in two ways. The broken lines represent net dollars saved, plotted quarterly and after deducting implementation costs and the cost of overall program administration. The solid line represents PTT activity (the PTT activity line is a qualitative representation of the teams' vitality, i.e., team membership, meeting attendance, number of teams, and team project activity).

The relationship between net savings and the level of activity is not a new one, however, the direct correlation of the two was invaluable in alerting the PTT Advisory Board that (in 1984) if corrective action was not taken the process would simply dissolve. The lag in the direct correlation is approximately one year. As you can see, we have projected three years into the future to monitor PTT vitality and to ensure corrective action is taken should the process again show trouble signs. This is done by taking credit for project net savings for a total of three years.

PHASE 3

Phase 3 of PTT's evolution is the period that the PTT Advisory Board began to notice trouble signs within PTT. Upon completion of a detailed cause and effect analysis utilizing the PTT process, the Advisory Board determined that the causes of the program's decline were rooted in the part-time nature of the participants. There were no full-time facilitators, or coordinators, and little support outside the teams' immediate work place.

In addition, the overall emphasis the Division had placed upon PTT's place within its productivity initiative had been allowed to lapse. Fortunately, the PTT Advisory Board recognized these two major factors and performed a detailed evaluation of PTT's overall worth to the division involving a survey of all R&D personnel whether participating in PTT or not. The evaluation results led to the decision to secure a full-time coordinator/facilitator. However, the administration of the PTT process was not the only duties this position was to address. In addition, the overall quality/productivity improvement activities of the division were to be administered through this function and will be discussed later in this paper.

PHASE 4

Although centralizing the PTT coordination under one position helped in revitalizing the entire process, another event opened a new dimension to the PTT program. That event was the formation of two teams within the division's technical sections. Up to this time, teams had been formed within the support sections only. There were two engineering teams, but these were of a classical nature (Design Engineering, Instruments Design) and functioned in support of model fabrication for use by technical sections. Although of great value, there was little room for growth in these support areas. Without the technical sections, PTT was limited to a mere 20% of the Division's human resources.

As was the case in PTT's beginning, a strong supporter of the program was crucial in this move into the technical sections. This program advocate was found in a technical section manager who had recently transferred from one of the division's support sections that had already experienced great success utilizing PTT. This manager was the "toe hold" needed to implement the process as a technical section pilot and to prove or disprove what the Advisory Board had long surmised: the process would be as beneficial to the technical sections as it had been in the support sections. This was the breakthrough opportunity to prove the Board's hypothesis.

In planning for the start-up of these technical section teams, enthusiasm was high, yet we did not know what to expect. Exhaustive research to locate precedence for circles in an applied research environment yielded no results. We were on our own. The other hindrance was in training the team members and leaders. These were highly educated problem solvers. Standard circle training materials simply did not mesh with the team's needs. It was obvious that the next group would have to be trained with materials developed inhouse to receive the maximum benefits of the time spent on training.

When the teams began to meet, it became quite apparent that these were not ordinary PTT's. The members were researchers, trained for the most part to work in their own cubical on a certain segment of a project related to their expertise with little interaction with their co-workers. They were now in an environment that demanded group dynamics to make the process work.

The first two months of activity were indeed interesting. The early successes of the teams were in no small part due to the manner in which the teams were allowed to develop. As is the case with the start-up of any new team the early emphasis was on following the standard quality circle process. However, it was discovered early on that in order to fully utilize the talent of the members, the evolution of the teams would have to be allowed to be a dynamic one.

The basic tenants of PTT (which are those of quality circles) were adhered to, but only if they did not inhibit the team's creativity. For example, one team developed its own team charter to govern the selection of projects and their ultimate implementation of projects. More than anything else, this gave the team a sense of responsibility and of purpose.

Due to the structure of the teams (they were made up of Group Supervisors, Engineers, Specialists, Technologists, and so on) the teams also found that they could achieve formidable results in ways other than those established by the formal PTT process. Until this time, the vast majority of projects were formally presented to the PTT Advisory Board for approval as is the general rule with quality circles. However, these teams discovered that, due to their structure, they themselves had the authority or could solicit the necessary authority to implement certain projects without formal Advisory Board approval. This concept had been utilized before in PTT, but now it has taken on a wider scope with more and more Teams using this method. Whenever possible we encourage this "local solution" method due to its expeditious nature and the networking it promotes as team members seek out and consult with "experts" while data gathering. When an Advisory Board presentation is deemed necessary by the team and their facilitator, the team will generally take a few minutes to detail their latest local projects prior to the presentation to be made.

Possibly the most radical departure these teams have made from the formal PTT process is in the utilization of Project Champions. This has allowed a team of eight members to work on as many as ten projects at once. The concept evolved due to the team's realization that of the various proposed projects on their brainstorming list, some were quite large in potential scope while a great number of them were basically small projects affecting their quality of worklife. It was determined that although the small projects were worthwhile, the cost of having the entire team work on its solution would far outweigh the potential benefits to be gained. Each Champion chose a small project that interested him/her from the team's prioritized brainstorming list, worked on a list of alternative solutions, and then came back and submitted his findings to the full team for input and/or approval. Interestingly enough, since the team had a Group Supervisor as a member, if the implementation of the solution would cost a small amount the team (and Supervisor) themselves would approve the purchase. This concept of Project Champions has been so successful that it is now utilized on projects of a projected large scope (such as a current project to develop an internal computerized data base for engineering resources).

By using Project Champions, local solutions, internal problem solutions, as well as allowing the teams to evolve in a dynamic way, the two technical section teams have in a little more than one year completed seventeen projects and are currently working on seven more. Other teams are now using similar techniques.

PROCESS BENEFITS

As always, the question of what has all of this meant in terms of dollars inevitably comes up. We attempt to treat this as a side benefit (although as of December of 1986 the cumulative net savings is 910k, reference Figure #1). The major benefit is in the interaction of the team members. The best example of this is a team in Instruments Design. This team is a closely knit group in all aspects of their worklife, due in no small measure to their team activities on a weekly basis. This is the type of benefit we are striving for, and it is what is rapidly developing in our technical section teams. When a Section Manager was asked what the greatest benefit was that he was receiving from his team he answered, "They are talking to each other!" No small accomplishment for personnel conditioned to individual research techniques.

At this point we are seeing more and more the benefits to be achieved in moving "From Cubes to Circles," that is from getting our research scientists to be team members. It definitely has given new life to the entire Research and Development Division's Quality Improvement Program.

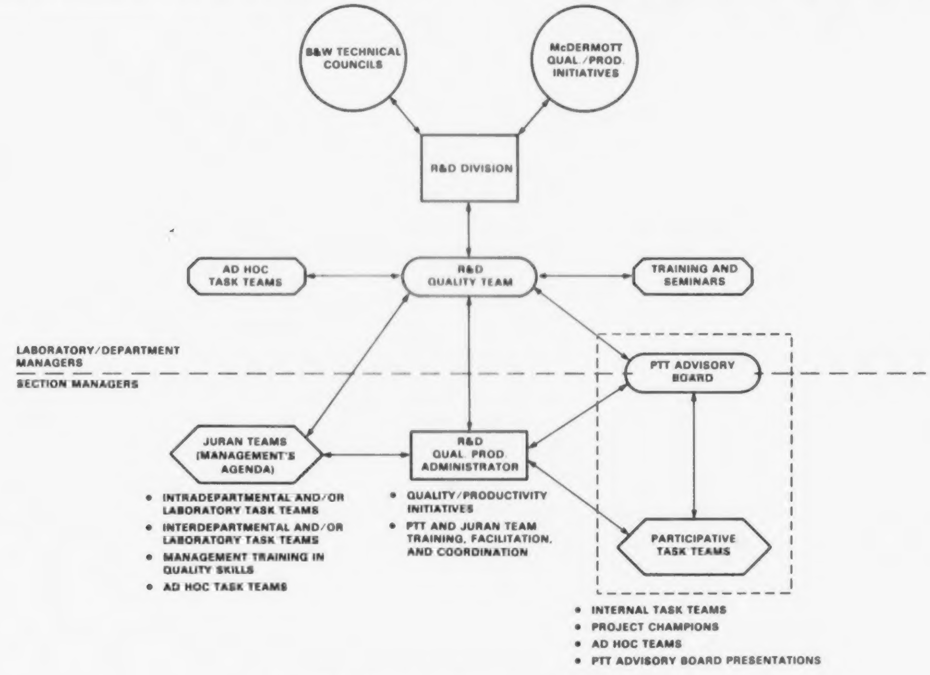
QUALITY IMPROVEMENT PROGRAM

The activities of PTT within the R&D Division encompasses approximately 20% of our overall Quality Improvement Program. It is an integral part, yet it does not stand alone.

A potential cause for a quality circle or employee involvement program to fail quickly is if that program is an organization's only improvement activity. By our PTT charter, the teams work from their own agenda and within their own work area. Therefore, with these limitations, the degree of improvement that is possible is restricted to those areas within the team's immediate sphere of influence, their department. There needed to be a vehicle for attacking interdepartmental problems. Otherwise, we would be neglecting the truly chronic problems -- the division-wide problems that must come from management's agenda.

Figure #2 diagrams the network established at the R&D Division to address various areas of quality improvement. We will not go into the overall makeup of the network or its infrastructure, we do however feel it necessary to point out PTT's relationship to the overall Quality Improvement Program. Since the PTT cannot and should not address items such as company policy, interdepartmental problems, or customers' perceptions of value of R&D effort, these types of major issues must be evaluated by alternate means if significant breakthroughs in quality are to be made.

The overall structure of the R&D Division Quality Improvement Program (QIP) encourages this to happen. Employees at all levels are utilized in various problem solving capacities. Additionally, with input from all organizational levels, it is possible to resolve issues of an infinite degree of complexity, whether the issue originates from the employees' agenda or from management's agenda. PTT is an integral part of this network.


B&W TECHNICAL COUNCILS
McDERMOTT QUAL./PROD. INITIATIVES
R&D DIVISION
AD HOC TASK TEAMS
R&D QUALITY TEAM
TRAINING AND SEMINARS
LABORATORY/DEPARTMENT MANAGERS
SECTION MANAGERS
PTT ADVISORY BOARD
JURAN TEAMS (MANAGEMENT'S AGENDA)
R&D QUAL. PROD. ADMINISTRATOR
PARTICIPATIVE TASK TEAMS
• INTRADEPARTMENTAL AND/OR LABORATORY TASK TEAMS
• INTERDEPARTMENTAL AND/OR LABORATORY TASK TEAMS
• MANAGEMENT TRAINING IN QUALITY SKILLS
• AD HOC TASK TEAMS
• QUALITY/PRODUCTIVITY INITIATIVES
• PTT AND JURAN TEAM TRAINING, FACILITATION, AND COORDINATION
• INTERNAL TASK TEAMS
• PROJECT CHAMPIONS
• AD HOC TEAMS
• PTT ADVISORY BOARD PRESENTATIONS

BABCOCK & WILCOX, RESEARCH AND DEVELOPMENT DIVISION
QUALITY/PRODUCTIVITY NETWORK

FIGURE 2

CONCLUSION

The PTT activities currently taking place at the Babcock & Wilcox, Research and Development Division are beginning to mirror the Division's day-to-day activities. The innovation that our research personnel normally bring to bear on our customers' research projects is also being incorporated into the PTT process. More than merely "today's program," PTT, along with the overall Quality Improvement Program is nurturing a quality conscious culture throughout the Division.

BIOGRAPHICAL INFORMATION

George W. Roberts is Manager, Quality Assurance for the Babcock & Wilcox Research and Development Division, headquartered at Alliance, Ohio. He has had many assignments in Quality Assurance since 1961, when he joined Boeing in Seattle as an Electromechanical Inspector. He was in the aerospace industry for twelve years, ten of which were at the Apollo/Saturn first stage assembly and test facility in New Orleans, Louisiana.

Mr. Roberts joined B&W's Nuclear Power Generation Division in Lynchburg, Virginia, in 1973. In August 1974, he became Quality Assurance Manager for the Alliance Research Center, and in 1985, he assumed direct responsibility for the Quality Assurance organizations at both Alliance and Lynchburg, Virginia, Research Centers. Mr. Roberts has presented technical papers nationally and internationally and has authored the only textbook published on the subiect of quality assurance for the research process.

Mr. Roberts is a Registered Professional Engineer in the State of California and is an ASQC Certified Quality Engineer. He is a member of IAQC, ASQC, and ASME.

Woodrow E. Diehl is Quality/Productivity Improvement Administrator for Babcock & Wilcox Research and Development Division, headquartered in Alliance, Ohio. He has been in various Quality functions since 1974, when he began with Keene Corporation's Freedom Ring Division as a Lead Inspector. Since that time, Mr. Diehl has held positions ranging from Production Control Supervisor to Quality Manager in various industries.

Mr. Diehl joined B&W's Research and Development Division in 1985. As Quality/Productivity Improvement Administrator, his duties include coordination of the Participative Task Team (B&W's Quality Circles) process throughout the Division. Mr. Diehl has been directly involved in facilitation and coordination of Quality Circle/Employee Involvement programs for six years and has been a member of IAQC for five years.

Can Quality Circles and Quality Improvement Processes Function Together To Enhance Employee Involvement?

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Imo Delaval Inc., a major manufacturer of rotating machinery, is reaping substantial benefits from both its Quality Circle Process and its Philip Crosby Quality Improvement Process. This paper explores elements of both processes and explains how two (2) separate employee involvement activities have worked to strengthen the organization.

Sustaining circles meet each week in conventional circle style to work on problems and projects in their own areas. Non sustaining problem solving teams meet weekly to work on problems that encompass several areas. Examples of successes and setbacks are used to illustrate how the four year old Quality Circle Process and the two year old Quality Improvement Process combine to provide a stronger employee involvement culture.

I. WHAT IS IMO DELAVAL INC.?

Today's Imo Delaval Inc. is a multi-product, multi-market company with 14 divisions worldwide. In 1901 our doors opened in Trenton, New Jersey as De Laval Steam Turbine Company. The company was founded by Dr. Carl Gustav Patrick De Laval, a Swedish scientist, whose interest in high speed rotating machinery led to the invention of the impulse steam turbine. During the years since then, our name became synonymous with quality rotating machinery used to generate, transform, transmit and control energy.

In 1963, Transamerica Corporation acquired Delaval. By a merger of other industrial properties, we became Delaval Turbine Inc. From 1979 to the end of 1986 we were known as Transamerica Delaval Inc.

In this, our 86th year, a new corporation has been formed to carry on the traditions of the past into an opportunity filled future.

The Delaval Turbine Division facility in Trenton, New Jersey is the focal point of this paper. The Division accounts for 25 percent of sales in this 400 million dollar corporation. Along with the major Trenton facility, the Division is also responsible for a repair facility in Houston, Texas, and an airfoil and blade manufacturing facility in Manchester, Connecticut.

Our divisional product lines and primary markets include commercial and marine steam turbines up to 65,000 HP, (including cogeneration) commercial and marine gears; pumps up to 38,000 HP for utilities, municipal water and sewage plants; and compressors up to 35,000 HP for chemical, petrochemical, oil/gas and other industrial processes. Our products are located world wide.

Delaval has a proud past and a strong reputation in the field of high speed rotating machinery. Our Turbine Division employees proudly work to our Divisional Mission which is: "Ensure customer satisfaction with high-quality engineered rotating machinery systems and services in selected segments of the global market for energy conversion".

This mission and our commitment to employee involvement are the keys, we believe, to meeting and mastering the challenges of our future.

II. EMPLOYEE INVOLVEMENT STATUS

QUALITY CIRCLES

The acronym P.R.I.D.E. (Progress Relies on Involved Delaval Employees) was chosen as the name for our circle process. It is not the intent of this paper to describe the Quality Circle process since much information is available on the subject. More time will be devoted to an explanation of our Quality Improvement Process in the next section.

Our circle process began in 1983 with outside facilitator training and in-house leader and member training. From the beginning, office and shop employees were given the opportunity to form circles. Our Steering Committee included representatives from Local 3355 of the United Steel Workers of America.

Nearly four years have passed since eight pilot circles were started. Today, there are 25 active circles (14 office and 11 shop) with a membership of 220 employees who make up 40 percent of the Trenton work force. Over 175 projects and action items have been worked on by circles and, to date 100 percent of our circles' efforts has been approved and implemented. Savings from these accomplishments have been substantial, but the emphasis is "Improved Interaction Skills". Through valid observations and improved in-house communication, circles have proven that they enhance the quality of worklife at Delaval.

QUALITY IMPROVEMENT PROCESS

While the circle process is a vehicle for solving problems in the circle's work area, the Quality Improvement Process directs effort toward solving problems that cut across several segments of the organization.

By the first quarter of 1985, all staff level managers and a group of management team instructors had attended the Philip Crosby Quality College in Winter Park, Florida. From these roots, our Quality Improvement Process took hold. Our Quality Improvement Team (QIT) was formed in March, 1985 and changed the process name from Quality Improvement to Defect Prevention Process (DPP).

It was easy to see that the P.R.I.D.E. circle process had developed a strong foundation from which employee involvement could grow. It was also evident that the circle process must remain a separate process because of its unique advantages. The Defect Prevention Process opened additional channels of communication and additional opportunities for employee involvement.

The "Four Absolutes of Quality Management" serve as the base for the entire Defect Prevention Process. The Absolutes give us an understanding of quality that can not be misunderstood. All of our employees now speak the same "Quality Language".

Quality should not be perceived in various ways by our employees, customers and suppliers. Management of Quality must rise from conventional wisdom to reality. (See chart below)

CONVENTIONAL WISDOM	ABSOLUTES	REALITY
Goodness	Definition	Conformance
Appraisal	System	Prevention
That's close Enough	Performance Standard	Zero Defects
Indices	Measure	Price of Nonconformance

Quality is defined as "Conformance to Requirements", not good, nice, shiny or expensive. A system of "Prevention" eliminates problems rather than correcting them after a process has been completed, or sorting good from bad. "Zero Defects", which is an attitude and philosophy, replaces acceptable quality levels or "that's close enough". Measurement focuses on the "Cost of Quality" and the "Price of Nonconformance" rather than various quality indices.

The Defect Prevention Process consists of a 14 step framework supporting the "Four Absolutes of Quality Management".

Defect Prevention Process Steps

1. Management Commitment
2. Quality Improvement Team
3. Quality Measurement
4. Cost of Quality
5. Awareness
6. Corrective Action
7. Zero Defect Planning
8. Quality Education
9. Zero Defect Day
10. Goal Setting
11. Error Cause Removal
12. Recognition
13. Quality Councils
14. Do It Over Again

Members of the Quality Improvement team manage each of the steps. Each manager/step coordinator directs his/her function with the understanding that Step 14, "Do It Over Again", is an integral part of each step. Each step offers more employees the opportunity to get involved. "Quality Improvement Team", "Management Commitment, and "Quality Councils" all serve to maintain and improve the dynamic process. The "Education" step affords Quality training to EVERY employee. "Error Cause Removal" and "Corrective Action" afford time and talent in the pursuit of wide scope problems. "Quality Measurement", "Goal Setting" and "Cost of Quality" allow accurate gauging of improvements and areas that need to be improved. "Awareness" and "Recognition" highlight employee commitment to quality. "Zero Defects Day" affords a celebration to signify commitment to quality. (See Quality Policy below).

TURBINE DIVISION EMPLOYEES' QUALITY POLICY

"WE ARE DEDICATED TO CONFORMING TO REQUIREMENTS ESTABLISHED WITH OUR CUSTOMERS AND SUPPLIERS, INTERNAL AND EXTERNAL, THROUGH OUR PERSONAL COMMITMENT TO DEFECT PREVENTION."

Over 300 employees (56 percent) participate on Defect Prevention Process subcommittees and/or on the Corrective Action Solution Pool. Problem solving team members are selected from the volunteer pool. Along with our 25 sustaining P.R.I.D.E. Circles, up to 30 nonsustaining problem solving teams are active at any one time. Of the 220 active participants in the P.R.I.D.E. Circle Process, 140 are also active in DPP. Therefore, over 70 percent of our employees are currently part of our employee involvement process.

III. COMPARISON

Now that we understand how both processes work, it is important to talk about the similarities and differences.

- Both processes have Steering Committees. The Steering committee for the Defect Prevention Process is made up of Staff only, while P.R.I.D.E. is made up of Staff, Middle Management, Union Representatives and Facilitators.

- Both require management commitment and participation. Without it, both processes would fail.

- The Quality Improvement Team, which is made up of middle management (9 individuals), manages the 14 step Defect Prevention Process. A coordinator, one full time facilitator and 6 part time facilitators manage the Quality Circle Process.

- Both processes require continual awareness and recognition. If people are not made aware of the successes and recognized for their efforts, it becomes another issue that can cause failure.

- Quality Circles meet one hour a week. Members learn the problem solving techniques, then they identify problems in their area and solve them. In the Defect Prevention Process, problems are handled by the

Error Cause Removal Team (ECR) and Corrective Action Team (CAT).

Employees are given an opportunity to fill out forms and turn the problems over to the Error Cause Removal Team. The ECR Team classifies each submission as minor or major and insures that the problem is well defined. If it's a minor problem and/or just requires feedback to the originator, ECR will handle the problem. If it is a major problem (usually affecting several departments), it is passed on to the Corrective Action Team.

The Corrective Action Team has the availability of a Solution Pool that consist of volunteers from all departments. A volunteer is chosen from each area that is involved with the problem. They will continue to meet until they have reached a solution to a problem and it is submitted for approval. The process is designed so that the originator is always kept informed on the status of the problem. It is important to note that in both the Defect Prevention and PRIDE Circle Processes, only one major problem is worked on at any one time by each team.

- The Defect Prevention Process requires that each department take measurement on a major nonconformance they select in their own area. This measurement must be posted in every department so everyone can keep track of how well they are doing. In Quality Circles, members are required to collect data and measurements, however it is not required to post them where everyone can see them. Both the Defect Prevention and Quality Circle Processes require the setting of goals in order to eliminate nonconformances and/or track the progress of a project.

- Cost of Quality, which stems from the four absolutes, is one of the driving forces of the Defect Prevention Process. By learning how to identify problems and take measurement, you can assign a dollar value. Putting problems in dollars in our society is a measure that we all understand, and a way of ranking major problems. In Quality Circles, while savings are a great benefit, the main gain is improving interaction skills.

- Zero Defect planning and Zero Defect Day are designed so that every 12-14 months a time is set aside to celebrate a recommitment to quality. It's a festive day and usually requires several months advance planning. It also does a great job increasing the awareness of the process. The Quality Circle Process has no defined parallel activity, however, many options are possible. Our circles recently sponsored an open house; and we conduct a P.R.I.D.E. Circle breakfast annually.

- Quality Councils are designed to bring key customers and key suppliers into the process. The success of Defect Prevention relies heavily on these individuals who are not available at the division every day to participate in the ongoing activities. Council members have the opportunity to become educated in the process and to discuss major problems or concerns. In Quality Circles, the Quality Council concept does not exist.

- The Education System in the Defect Prevention Process is designed to educate every employee. Office employees receive thirty hours of training, while Shop employees receive six hours. Everyone learns to understand the process objectives and learns a common language. Everyone learns about the definition of quality; measurement; communication skills; cost of quality; how to run team meetings; five step problem elimination; and the various roles people play in causing quality improvement. Quality Circles, in most cases require only the areas that have circles to go through eight hours of basic circle training. The problem solving techniques, along with group dynamics exercises, excel at improving interaction skills, as well as identifying problems and getting to the root causes.

- The Defect Prevention Process has a final step called "Do It All Over Again", which means it is a continuous process and requires the discipline to work at it every day. The Defect Prevention Process has a more rigid structure for keeping the discipline. It does this by requiring that everyone become educated and by having a central Quality Improvement Team to manage the activities that permit people to maintain the structure of quality improvement.

IV. COMPATIBILITY

Improving Quality of Worklife through employee participation is not without its problems. Whenever you are changing a culture, you will run into situations that may have been handled differently in the past, or not at all, i.e., someone questioning a method or a procedure that needs to be implemented. In the past, a manager might have just told the person or group to do as instructed, without allowing questions. With employee participation, the manager will listen to their concerns and try to make them understand why something is required. This may even mean that the manager will have to compromise his position because the person or groups' concern may have validity. But after having gone through this exercise, the person or group will have ownership of what is trying to be accomplished. The chances of success are greater if people take the time to listen. To do all of this requires a significant cultural change.

We all know this is the right thing to do, but we never seem to find the time to do it. All our lives we are driven by pressures and schedules. We are taught to get things done as fast as we can and get on with the next problem, and that's why it is easier to just tell the people to do it and go back to your desk. Never mind the fact that you solved the problem in one department, but made the work in the next department ten times more difficult. Because of this example, being driven by pressures and schedules, you start to hear the common complaints - too much training or too many meetings, and how do you get anything done. There are too many problems to work on and there is not enough time in a day to do everything, let alone solve problems and follow up on them. No matter what business you are in, these will be the common complaints. Without manage-

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ment's support and the company's discipline to work on a process everyday, you will not satisfy the complaints.

Another major problem we have run into with both processes is that people really don't know how to define a problem. They usually define it in such a way that it takes them right to a perceived solution rather than the root cause. It is very difficult for people to learn how to state a problem as it exists, without adding personalities. By incorrectly defining a problem, you will come up with an improper solution, thus causing a lot of wasted time and effort.

All of these problems are major obstacles that have to be overcome before you can start to realize success. If you keep the discipline of working at it everyday, people will start to understand that problems can be solved. They find that by taking the time to solve problems up front and getting to the root cause, problems can be solved efficiently and permanently. Remember, we never have time to do things right, but we have time to do them over again. When problems get solved, people find that they have time to do other projects. Taking the time to have meetings to solve problems has major advantages in both processes.

- People learn that they are not the only ones that have problems.

- Through the Quality Improvement Processes where you involve all the departments connected with a problem, people learn more about how the company functions.

- Because of all this involvement, people learn to interact and communicate better than they have before.

With these advantages, both processes become infectious. People want to learn more and get involved in solving problems. They consider themselves part of the company and have a positive feeling that they are contributing to the end result.

There are many ingredients that have made our processes successful, and it would be difficult to say that one had more of an effect than the other. However, there is one that should be expanded on, and that's education. Education of all the employees is extremely important and one that should not be overlooked. If nothing else has been learned to date, it's the importance of education. Before you can change a culture, everyone has to be educated in what the process is all about and what you are trying to accomplish. Over the years, many programs have come and gone and very few times have any been sustained in an organization. Because of this, there is another common complaint; "What makes this any different than what we have tried before?" Usually upper management has an understanding of what you are trying to accomplish, and that's where it stops. At this point, when you try to drive it down through the organization it becomes very difficult, if not impossible, to have people feel part of the process. A company has to be driven from the top and be supported by all employees. This can happen through education and training.

Part of this education is awareness. As you begin to obtain success, it's important to inform the people. Without this information, people don't know that all their efforts are paying off.

Awareness is not something that you can do periodically; it's something you have to do continuously. Along with awareness, you have to recognize people or groups for their accomplishments. It's nothing new - people just like to be told they are doing a good job. In both of these areas, the Turbine Division has not done enough to date. There have been a lot of successes, but not enough people know about them. We are aware of this and are working towards resolving the situation.

V. SUMMARY

You can see that both processes are similar, yet very different. The similarities caused a lot of problems in the beginning, due to the fact that people did not understand the differences between the two processes. Both processes are very dynamic and complement each other. It is not the intent here to say that one is better than the other. On the contrary, we feel that both are required to improve the Quality of Worklife.

The more we try to get people involved, the more we can improve the quality of worklife. It takes more than management to change the culture of a company; it takes people - without the people, we will not improve. It's up to management to give the employees the tools to work with. Tools like Quality Circle and Quality Improvement Processes improve the Quality of Worklife and can aid a company in meeting goals essential for survival in today's market.

BIOGRAPHICAL INFORMATION

PETE ROBINSON is Quality Operation Manager for the Delaval Turbine Division of Imo Delaval Inc. He is also Quality Circle Coordinator and an instructor in the Quality Improvement Process. Pete is a graduate of the Maine Maritime Academy and has twenty years of manufacturing experience. He is one of the originators of the Quality Circle Process at Delaval and is also past president of the Central Jersey Chapter IAQC.

GORDON MCDONOUGH is Circle Process Senior Facilitator and Quality Improvement Process Administrator for the Delaval Turbine Division of Imo Delaval Inc. Gordon is a graduate of Trenton State College and has twenty years of manufacturing experience. He is one of the originators of the Quality Circle Process at Delaval and is also currently on the Executive Board of the Central Jersey Chapter IAQC.

High Touch In A High Tech Environment

J. Daniel Schneider
Vice President of Human Resources, Financial Information Trust

Michele Matt
Training Specialist/Facilitator, Financial Information Trust

Adding significance to work characterizes the "high touch" style of participative management. Quality Circles provide an excellent bridge in moving from traditional to non-traditional styles of management when they are strongly supported by organizations. This support must be visible not only in managers' actions, but also very obvious in the business plans and objectives of the organization. With such support, formal employee involvement programs can overcome initial resistance at lower levels, and, over time, form the basis for the underlying change necessary to develop high performance work teams.

W. Edwards Deming, author of Quality, Productivity, and Competitive Position, believes the birthright of every human being is the right to do a job in a quality fashion. Joe Batten, author of numerous management books and videos, believes that the finest gift you can give another human being is the gift of an excellent and stretching expectation based on a never ending search for present and potential strengths. Both men carry the same message: Give significance to the people you work with and be sensitive enough to discover their wants, needs, and possibilities.

Large and small corporations reflect that belief in various forms of employee involvement programs. For some corporations, the programs fail; for others they succeed. The difference lies in the answers to simple and yet tough questions. Why does the corporation want involvement? What will the corporation gain from this involvement? How will the programs be implemented? In failing or failed programs, the answers are lost in the illusion of technique. In successful programs, the answers weave throughout the business plan.

The Financial Information Trust manages information, or processes data, for 250 savings and loan institutions and banks in the central United States. The Trust now employs more than 350 articulate, intelligent, and sincere people to meet this challenge. Formed in 1978, the Trust operated for several years without a formal business plan, knowing only that its business purpose or mission involved providing quality information management and other services on a cooperative basis to financial institutions.

At various times between 1978 and 1984, different approaches to employee involvement at the Trust met with degrees of success ranging from none to unremarkable. In November and December of 1984, however, the Trust began to move toward what John Naisbitt refers to as networking management as opposed to the traditional hierarchical structure. A major result of this move surfaced in a formal business plan clearly stating what the Trust wanted in the way of employee involvement; why it was necessary; when to begin; who would be involved; and how it would be implemented and measured.

The rationale for these elements can be found in the philosophy, goals, strategy, and objectives stated both in the business plan and in the member, or employee, handbook.

The business plan creates a philosophy, not rules, to live by. Stated as an expectation, the philosophy calls on each member, or employee, to manage available resources in ways that create teamwork, promote individual growth, and encourage initiative, innovation, and efficient application of technology.

The business goals growing from this philosophy deal with being a reliable, cost effective service provider. Strategies for achieving these goals focus on attracting and retaining affordable and well qualified people and involving them in planning management systems, procedures, and job design with an eye toward optimizing people rather than developing people to optimize systems.

Management Support

In choosing Quality Circles as the initial formal employee involvement tool, the Trust established objectives oriented toward: reducing/preventing errors; promoting personal and leadership development, harmonious work group relationships; promoting job involvement; increasing motivation; and creating problem solving capability.

Management's primary interest focused on the "high touch" objectives as a way of planning change. Quality and productivity improvements continued to be high expectations; but failure to have "the numbers come out right" would not end efforts to develop and nurture high performance work teams.

The initial Steering Committee included all members of senior management, another officer, and the facilitator. Guidelines were approved by the Committee, which was chaired by the non-senior officer. The facilitator developed an implementation plan, presented it to the Steering Committee, and began training all officers, managers, and supervisors in quality circle techniques.

During these initial training sessions, the first signs of resistance appeared. Pockets of mid-western "show me" skepticism brought out the "litany of all sins past" and expressed doubt that the program would survive its pilot stage.

After completion of the training, the Steering Committee did have trouble finding enough leaders for the four circles to be formed. This problem was resolved when the Committee decided to ask some of those trained to volunteer to lead a circle during the pilot program. No commitment was sought beyond that point.

The Committee's decision to limit circles' scope of responsibility to problems within their own departments proved to be a second stumbling block in producing large numbers of participants, especially in white collar departments, where employees viewed this as a sign of impotency. Even so, the program had enough interest to get off the ground.

Throughout the pilot project, reaction to the new involvement efforts continued to be mixed. As an example, just before one of the pilot circle's could make its initial presentation, the group's management took some corrective actions on their problem which lowered the impact of the circle's resolution. This same circle experienced further problems with several other aspects of the process and disbanded shortly after the conclusion of the pilot project.

Another of the pilot circles also experienced problems during the pilot project and later disbanded after making its management presentation. In both cases, the issues were related to: the scope of the problems chosen; an opinion of the circles as an added responsibility rather than business as usual; and lack of process commitment or understanding of those involved.

While two of the circles were struggling, the remaining two did well and all continue to produce both tangible and intangible results. Near the end of the pilot project, the Steering Committee asked the Chairman and the Facilitator to meet with all of the circles to find out what strengths they saw in the program and where some needed to be developed. Circle members viewed the strengths of the program as being: the involvement process itself; the newly acquired problem solving and leadership skills; and their completed projects.

Suggestions for strengths needing development included: expanding the scope of the circles by creating "inter" as well as "intra" department circles; increasing senior management support of the program; composition of the steering committee; and strong middle management support.

Expansion

Believing that the missing strengths could be developed, the Steering Committee chose to continue employee involvement through quality circles after surveying employees to determine the level of interest in continuing. In January of 1986, the Committee used the corrective feedback from the circles to introduce interdepartmental circles. This move alone renewed interest in the circle process. In addition, the Committee increased publicity for the program. A quarterly newsletter, written and published by the Leaders' Circle, was well received internally; and its first issue was recognized by IAQC as "The Newsletter of the Month" in the March, 1986 Quarterly Circle Digest.

Senior Management of the Trust also increased its visibility in the process. In Quarterly Employee Meetings, a portion of each meeting is dedicated to "Spotlighting", or tracking and recognizing, the progress of the current circles. All senior managers, including the President, are invited to management presentations. Most attend and several regularly visit portions of one or more meetings each week. As a way of increasing middle management's support, several of the senior managers now include circle status reports in their staff meeting agendas. Several middle managers also sit on the Steering Committee and participate in the Leaders' Circle.

The end result of these efforts has been the introduction of four new circles, the maximum allowed during this expansion phase. At this writing, the new circles are doing well. Prior to November 1, 1986, over 33% of the total Trust Staff was involved in the program. Certain problems continue, such as the "add on" perception and the creation of an "us" and "them" attitude based on whether you do or you don't choose to participate; but the overall state of the program is quite healthy.

The Future

As this phase of the employee involvement program enters its second December, the Steering Committee must consider further circle expansion and a general broadening of the program's scope. In November, 1986 the Trust acquired another data center in Des Moines; so some consideration will be given to the introduction of quality circles in the new departments created by this purchase.

In addition, the program may be well enough grounded to begin interdisciplinary circles. During the past year, interdisciplinary "task forces" were formed to create a smoking policy and evaluate availability of financial software packages. In March, 1987, another of these task forces will recommend the purchase of both a software package and the hardware on which it will run.

Employee involvement in high tech enterprises can bring "high touch" elements into the task orientation of the workscape. The future success hinges on the skill of the facilitators, the leadership abilities of its managers, and the integration of employee involvement in the business plan. At the present time, the Trust is looking for ways to make reward systems reinforce the desire for not only individual effort but also work group cooperation. When successful in blending these elements, the Trust, or any other high tech environment, will see high performance work teams exercising Deming's birthright and Batten's gift.

Biographical Information

Dan Schneider serves the Financial Information Trust as Vice President of Human Resources. He held previous positions with HON Industries and participates in the local chapters of several national organizations.

Michele Matt serves as the Training Specialist/Facilitator for the Financial Information Trust. She has been instrumental in the development of the Quality Circle program at the Trust.

Achieving Target One

Vicki L. Stubbs
Wire Rope Corporation of America, Inc./St. Joseph, Missouri 64502

After four years of Quality Circles, it was time to re-examine our participative management process. In 1984, Quality Circles became Target One--a team based concept involving 70% of employees in its first year of operation. The principle is simple, yet effective: put the right people together to solve the problems that they identify, have them meet as needed, and then disband when they've completed. The revised process has been tailored to fit the needs of our organization and its employees. By working together, we will achieve our Target One: to be the best in the industry.

Company Background:

Wire Rope Corporation is the largest independent producer of wire rope in the nation. WRCA was founded in 1931 at New Haven, Connecticut. In 1950, it moved to St. Joseph, Missouri--a midwestern city approximately 50 miles north of Kansas City. (St. Joseph was the starting place of the Pony Express and the home of Jesse James.)

Wire rope, related lifting products, and high carbon wire are made and sold from more than 600,000 square feet of factory space at St. Joseph and sling fabrication facilities at several locations across the nation. Approximately 800 people are employed throughout the company, including more than a score of wire rope distribution centers from coast to coast.

WRCA sell Wireco and Leschen brands of more than 1200 types and sizes to meet the needs of construction, mining, oil and gas production, transportation, forest, maritime, and general industry.

Quality Circles:

In 1980, the company decided to embark on a participative management program--Quality Circles. The pilot program of three circles quickly expanded and the next three and one-half years would see as many as 35 plant, supervisory, and office circles in operation with two facilitators. The program was a textbook circle program as outlined by the experts. Facilitators were trained and certified at week long training sessions. Circles had leaders (supervisors) and assistant leaders who were trained in a three day off-sight leader training. Circle members were all from the same department. Steering committee members were from all major functional areas of the company, including the bargaining unit. In the nearly four years of its operation, the program produced more than 500 projects.

We went through prosperous times, lean times with lay-offs in both plant and office, meeting boycotts for various reasons, and a disasterous flood. But despite it all, the program went well for the first few years.

It was beginning to become evident that something was either lacking or needing changed in our program... waning membership, interest, and gadgetry for projects.

Transition:

We held meetings with circle members and also administered a company wide employee opinion survey. We discovered it was time to make some major changes which would "tailor-fit" our program to our company's needs.

Why Change? If a Quality Circles program is working the way it should be, employees in circles should have a better attitude about their work, company, etc., than non-circle members. In the employee opinion survey circle members were often times more negative than their noncircle counterparts. During our meetings with the circles and with management, specific problems with the existing program began surfacing. The top ten problems voiced most often were:

1) not having the right people together to solve a problem or work on a project.
2) lack of effective communications on projects, progress, etc.
3) lack of ample time to work on projects: one hour a week was not enough
4) time spent every week in circle meetings was not cost effective
5) lack of project/program awareness by upper management (questionable management support)
6) using circle autonomy to bypass established channels of procedures
7) failure to keep circle members motivated
8) no project follow up
9) not enabling people to participate at a fast enough rate
10) lack of cooperation between affected departments.

Because of these difficulties, as well as several others, the Target One program was born in October of 1984. It is a refinement of the Quality Circles program, i.e., a participative management program in which employees meet in small groups on company time to help solve the problems that affect them and their job performances. Anyone can submit an idea or project.

Target One: How It Functions:

The Project Request Form System--anyone can submit a proposed project or idea on a green project request form available in the supervisors' offices or from the program facilitator. This form provides space for a description of the project or problem, proposed changes, and the benefits that would be accrued by adopting this idea. Also, sketches are recommended, if applicable. The form is signed by the originator, and turned into his/her supervisor for comments, and then sent on to the area manager for a decision. A response to the request is returned to the originator within ten working days, or notification is given as to the delay. If accepted, whatever action that is needed will also be outlined on this response. Copies of this completed form are sent to the vice-president of manufacturing, and the program facilitator. Additional copies are sent to any affected departments. Not all ideas or problems that are turned in on these sheets require a team to solve them. Oftentimes, it is something that can be handled through existing managerial, maintenance, and/or engineering functions.

The Team--Teams are selected on a project basis from the affected work and support areas. If a project needs a team to address it, the area manager selects the best group of individuals who will make up the team. Team members include workers facing the problem, maintenance and services areas which may be involved, engineering, supervision in the area, and any other company or outside expertise that is needed. Shifts and individuals for teams will be on a rotating basis, unless circumstances dictate selections of members. The manager will allot time and location for meetings. Meetings will take place in the work area, where the problem exists, or other suitable location. No regular, set meetings will take place but will be on a project basis. Several teams can function simultaneously if the area and project scope warrant their operation. Measurement tools, including objectives, must be established so results can be measured. These are set forth by the area manager and communicated to the team prior to start-up. Basic training in group problem-solving, effective meeting guidelines, and general group dynamics may be discussed at team start-up.

In the event that a team's objectives are not met, either the time will be extended by the area manager, the team would disband, or another team would be selected by the area manager to take up the project. Once the solution is formalized by the team, and is presented to and accepted by the area manager, the team disbands. Team sizes vary with the projects and the mill where they are formed--anywhere from three to seven members not including support personnel. A leader, secretary, and follow up monitor are generally selected in each group. The leader "leads" discussion keeping members involved and on the subject at hand. The secretary records the minutes of the meeting which are later prepared and posted company-wide. The monitor follows up on the action the team decides to take, whether it involves an experiment or the finished solution. He/she reports the progress regularly to the area manager. Teams may have to meet several times and run numerous experiments before their problem is solved satisfactorily.

The Monitoring Committee: This committee replaced the Steering Committee and meets on a quarterly basis to check progress, make revisions, establish additional training as needed, etc. Composition consists of the four area mill managers, facilitator, and four union representatives selected by the union committee. Other members may be added as the program branches out in new directions of the company.

Is Target One Making A Difference?

When returning to the top ten problems encountered with circles, we can examine how the new program handles each:

1) not having the right people together to solve a problem or work on a project...Target One team members are those best suited to work on the problem or project, regardless of shift, department, etc. Whoever is needed is a member. Plant engineering/services are present, as is the mill manager. If after the team begins, it is seen that someone else is needed, that person is acquired also.

2) lack of effective communications on projects, progress, etc...Target One has numerous communication means:

    a) weekly and quarterly company publications highlight activities
    b) minutes of all team meetings are distributed/posted company-wide
    c) monthly progress reports on projects are distributed/posted company wide
    d) year-end report on participation/projects is distributed/posted company-wide
    e) inplant projects visits are undertaken monthly by upper management. At this time projects are observed in operation and originators are recognized.
    f) monthly meetings are held between the program facilitator and each mill manager to check project status, decide action needed, etc.
    g) quarterly meetings are held with upper management, mill managers, and program facilitator to check program status, discuss any problems with projects, etc., and take any action necessary.
    h) quarterly meetings of the monitoring committee are held to check progress, discuss any program problems or needed revisions, etc.
    i) three types of monitors follow up on projects. These are individuals selected to investigate and report regularly on projects in the following 3 ways:

        1) project request forms--to see required action is taken to complete projects
        2) teams--to monitor experiments, to see action is taken, etc.
        3) completed projects--to be sure the solution solved the problem, if any needs for expansion surface in other similar areas, etc.

3) lack of ample time to work on projects: one hour a week is not enough...Target One teams meet as long and as often as they need to, to solve the problem. If a solution is not reached, the group may disband and another group formed to attempt a solution. (This time objective is monitored by the area manager to insure parameters are met and not abused)

4) time spent every week in circle meetings was not cost effective...Target One teams are formed after the project is selected, so time is spent on solutions only. Also, only people relative to the project are members.

5) lack of project/program awareness by upper management (questionable management support)... Target One has the monthly inplant projects visits by upper management; quarterly meetings with the mill managers and program facilitator to keep updated; and various written communications at their disposal (listed in #2 above).

6) using circle autonomy to bypass established channels of procedures...Target One project request forms provide for existing channels of action to be taken, if applicable. Also, team composition avoids nonuse of existing channels by involving those areas in solution acquisition.

7) failure to keep circle members motivated... Target One does not have ongoing weekly meetings. Team meetings are to solve a specific problem, etc., that directly affects members. Motivation is obtained by direct involvement, interest.

8) no project followup...Target One provides for follow up or monitors at three critical areas: (a) on the initial project request to insure action is taken to complete it, etc. (b) on team results/experiments to see action is taken, results are achieved, etc. (c) on completed projects to insure the action taken solved the problem, discover any changes needed, expansions, etc.

9) not enabling people to participate at a fast enough rate...Target One teams meet as needed on a project basis for a limited time, not weekly. Many more people can become involved at a faster rate than before. More teams can form and disband than circles could. Employees are willing to get involved with a team, but were not willing to make a long term circle commitment.

10) lack of cooperation between affected departments ...Target One involves affected departments at the onset of the project: employees, supervisors, support personnel, etc. Everyone has a chance to voice input on their parts of the project, i.e., fabrication, design, utilization.

Target One operates by a detailed set of Policies and Operating Procedures that are updated annually.

What Projects Have Been Accomplished?

Some sample projects can be seen in these slides:

1) water filtration systems

2) hauloff oiler systems

3) organizing work areas--tool bins, strand storage, reel storage, gear racks, parts storage systems.

4) arbor maintenance program

5) wire package wrapper

Program Recognition:

Target One recognizes participants for their contributions to the program. Awards are based on participation and not on individual project merit. Specific criteria apply to qualify. Selection sheets are sent out to qualified individuals for their choice of awards. Selections for accepted projects include: ball caps, coffee mugs, playing cards, sports towels, or drinking glasses, all with the Target One logo.

Successful teams have choices of belt buckles, jackets, sets of glasses, sets of coffee mugs, or pen and pencil sets, all with the Target One logo. Selections change periodically, and are on display in the work area.

Statistics:

In the first year of Target One, 70% of all employees had been involved in some capacity. To date, as of the first of December 1986, there have been more than 700 projects submitted with between 70% to 75% approval and completion rates. Over 100 teams have met and solved problems. More employees were involved in Target One's first year of operation than in Quality Circles nearly four years of existence. Projects are surfacing at a faster rate than in the old system: Quality Circles: 500 projects/four years: Target One: 700 plus projects in two years.

Conclusion:

Target One is a flexible program which meets the needs of our corporation. It provides an avenue for taking advantage of our best and most valuable resource --our people. The changes they suggested are effectively making a difference. Together we will achieve our Target One and be the best!!!

Biographical Information:

Mrs. Stubbs has been involved in participative management at Wire Rope Corporation since the company adopted this philosophy in 1980.

She has served as advisor, steering committee member, assistant facilitator, and facilitator/ coordinator. She was a member of the 1983 program committee for the IAQC conference in Memphis, Tennessee.

The Campbell Challenge

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Why would Campbell Soup Company, a 118 year old company, create a Japanese styled operation following the concepts learned by studying many Japanese companies?

Why would a company who is number one or number two in most of its product lines restructure the way it operates?

You will need to understand the challenge of tomorrow to understand why we have been implementing what is referred to as "the total systems approach".

Over seven (7) years ago we started Quality Circles in our Swanson plant located in Salisbury, Maryland. Today Quality Circles are found in 61 Campbell locations in the United States, Canada, England, and Puerto Rico. Our next circles will be beginning in Mexico very soon, then on to Europe and Australia.

What do we need Quality Circles for?

Nearly three years ago we expanded into task forces. These are groups of employees, salaried and hourly, who work on an assigned problem.

What is the concern by the makers of Pepperidge Farm, V-8, Recipe dog food, Le Menu dinners, and Godiva?

What is this challenge?

Why change?

We have changed our ways because we must. There is no time to sit back and enjoy the feeling of being at the top.

As we assessed many trends within the United States, we saw some very startling and shocking pictures.

Jobs formerly performed within the United States have been shipped overseas. It has been estimated that since 1980, over four million jobs have been lost to foreign workers.

When I was growing up in Michigan, there was much construction and road building. All the equipment that I can remember seeing had the name CATERPILLER on the back. In the area of earth moving equipment, CATERPILLER had always been number one. When we visited Japan in November of 1985, the Japanese let us know that KAMATSU was now first in total sales. How many of you even heard of them?

Texas Instruments had been the world leader in sales of electronics. Just over a year ago they were surpassed by a Japanese company named NEC. In case you are wondering who they may be, they are the parent company of Panasonic.

In 1958, American automakers had 78% of the market. Today they have only 28%. As an industry the Japanese own 30% and it is rising. It has been projected that South Korea will sell 276,000 copies of the HYUNDAI within North America.

Other U.S. industries have felt the challenge:

70% of the shoes Americans buy are imported.
40% of the semi-conductors are imported.
63% of the controlled lathes are too.

We have lost 20% of our ball bearing employment and 18% of our capacity within the last four years. This amounts to 50 plants that have been closed, sold, or converted for other uses.

And the news goes on -

50% of the world's shipbuilding is made in Japan.

75% of the world's need for microwaves is filled by Japan.

30% of the U.S. automotive market is imported.

Last year, I visited the motor capital of the world, Toyota City. Having been born and raised in Michigan, I knew that it had held the title "Motor Capital" for over 50 years.

Where did our sewing machine industry go? Recently, I read that Singer was closing up its last sewing machine plant.

In the field of robotics, the United States is not a major player.

You may ask, what does all this have to do with Campbell Soup. Please bear with me a bit longer.

Where has all the American steel industry gone to? How about the camera? In 1970, the U.S. had 25 brands of color T.V.'s. Now only two brands are made in the United States by American companies. Today, 50% of the world's supply comes from Japan. Since 1972, the foreign electronics trade has moved its volume of business in the United States from two billion dollars to almost eleven billion dollars last year.

Last year, we Americans bought 16 million VCR's and not one was made in this country. We don't even make black and white T.V.'s in America anymore. Don't try to find a portable radio made in America. There isn't any.

The next target is the auto parts industry, and it has been predicted by the Japanese Manufacturing Association that the Japanese will own over 300 plants in the U.S. within the next two years.

During our visit to Japan, we were constantly told about the Japanese worker. Without question the people were the ones who made the difference. We were told that at Toyota they received 1.9 million suggestions from the people during the prior year and that 95% of them were implemented before they were presented to management.

When we shopped at the Japanese department stores, we saw the store manager greeting customers as they entered the just opened stores. A visit to any department as a customer brought instant greetings. Every counter was staffed with employees to tend to the needs of the customer. What experiences can you remember from your last visit to an American department store? Were you waited on promptly and with a smile? Were you able to even find someone to wait on you?

American stores are seeing reduced profits, help is being cut back, shoplifting is increasing, profits reduced further. The staff is expected to cover more store because they can't afford the help. Have you ever wondered if the management of most American stores have ever identified the needs of their customer? It has been said that the United States is becoming a service nation. It appears that we have a lot to learn about service. Maybe the Japanese McDonalds could teach us a few things. As I entered, a number of the cashiers started to holler at me in Japanese. For a while, I wasn't sure if McDonalds was closed, whether it had wet floors, or I was not supposed to come in that door. After I placed my order, I found a cashier who spoke English. I asked what they all were hollering at the customers. He explained that each cashier operated his or her cash register as their own business and each prided themselves on getting the highest number of customers. My cashier had called out "welcome to McDonalds, I am available to serve you".

At Campbell, we are learning who the customer is. In many cases we found the customer was the Campbell employee in the next department or the next plant. We learned that the Japanese do not pass defective products to the next process.

Every Japanese facility showed us that improved quality will result in a decreased price. For years when I was asked about producing a higher quality, I could tell everyone that the price had to go up.

We saw the Japanese belief in their ability to produce perfection. They expalined how, in their nuclear plants, 16,000 parts had to be perfect.

To many Americans we are willing to settle for something much less than 100%. We schedule manufacturing plants at 70%, maybe 80% and, heaven forbid, soemtimes 90%. Take a look at the salary level of some of the major league baseball players. They lost 15 games, won five games and earned one million dollars. They batted 200 and made over a million.

We must begin to demand more of ourselves and of others.

How do you think people would respond at your company if the payroll department would post the following notice: "In keeping with plant efficiencies, this week only 75% of the necessary pay checks were produced and not all of those are okay". Would this create any problems?

If you went sky diving, what success rate would you expect on parachute openings? Did you know that at a 99.9% success rate within the U.S. airline industry, we could expect two airplane crashes a day.

One challenge at Campbell we faced was that many of our employees felt, as many Americans do yet, that when things really get tough, that good old American education and American technology will come through again.

The final statistic I would like to share with you today is: In 1985, 43% of all patents issued in the United States went to foreigners. Also in 1985, 41% of all the advanced degrees issued by U.S. colleges and universities went to non-U.S. residents. We are in a war and education and technology are not ours alone.

At Campbell, we saw what has happened to many industries. Today, we are concerned about the Japanese because they are building a soup plant in Fresno, California.

We are pulling together as a team because we must. If the Japanese take 50% of our business, half of us may not be here within a few years.

If after all the above mentioned statistics you can feel unconcerned, I'd suggest you watch the Koreans, the Indians, the Brazilians, and the Taiwanese. All these countries and all these people are learning from the Japanese.

The Japanese needed 25 years to perfect what they learned from us. The Koreans don't need that time since they are learning from perfection.

The Campbell challenge, if successful, will protect present jobs and create new ones. Our goal is to win. Our strategy is the total systems approach. Our circles must become a way of life for all Campbell employees. Our culture must change. A challenge to say the least.

Biographical Information

Larry Suchowolec has been in food and meat processing for 22 years. Positions held range from hourly employee, union representative, to Division V.P. of Operations. Graduated from Aquinas College. Joined Campbell in 1980.

Larry has taught nearly 200 seminars in the U.S. and Canada on Quality Circles, problem solving, management training and Deming, and is responsible for: Management Development, Training, Safety, Quality Circles, Participation Teams, and Deming Philosophy Implementation.

Larry is currently a member of the American Management Association, American Productivity Management Association, International Association of Quality Circles, Drexel University Advisory Board, American Society of Training and Development, and the Japanese Management Association.

Larry is an ex-founding board member of the Delaware Valley Chapter of Quality Circles, received the First Annual President's Award from Quality Circle Institute for leadership in employee development through Quality Circles, and in 1985 was a member of the Japan study team; visited and studied Japanese industry.

Implementing an Award-Winning Productivity Program in a White Collar Environment

Nancy A. Torrence
Babcock & Wilcox, Lynchburg, VA 24506

When Babcock & Wilcox received the U.S. Senate Productivity Award in 1985 they were recognized as a model for productivity for companies throughout the State of Virginia. The B&W program is an integrated approach to productivity improvement that comprises five facets: (1) employee involvement, (2) professional development, (3) automation, (4) communication, and (5) performance improvement. This paper covers the key elements of each area.

Background

Babcock & Wilcox, a wholly owned subsidiary of McDermott Incorporated, is one of the nation's leading suppliers of fossil-fueled steam generating systems and associated equipment, and is a principal producer of nuclear steam systems, fuel and equipment, and specialty steel tubing. The company provides fast-response parts replacement, outage management, plant upgrades, and engineered modifications to steam systems for electric utility, industrial, and marine applications. B&W is the largest employer in the Lynchburg, Virginia metropolitan area with four Divisions employing nearly 4000. The primary mission of the Nuclear Power Division, the facility that won the U.S. Senate Productivity Award, is to provide high-quality fuel, equipment, parts and services to the commercial nuclear utility market world-wide.

B&W's Nuclear Power Division (NPD) is involved in improving the quality and productivity of its 1200 engineers, professionals and clerical employees. These efforts are being implemented throughout the division's many product lines and support groups and range from improving the quality of worklife of employees to computer-aided engineering. This paper will briefly outline the various productivity efforts that help make us more competitive in the marketplace. These projects fall into five categories; (1) employee involvement; (2) professional development; (3) automation; (4) communication; and (5) performance improvement.

Employee Involvement

NPD comprises primarily knowledge workers. Therefore it made sense for us to tap this reservoir of talent to improve our operations. A centralized productivity program was designed in 1981 to recognize and reward employees who showed initiative in devising creative new ideas. The program which evolved was called the PULSE Program, **P**roductivity **U**pgrade **L**inks **S**uccessful **E**mployees. Each year this division pays thousands of dollars to individuals with ideas that save time or money as well as ideas for new products and services.

One facet of today's PULSE program is the **Speak Out** suggestion system. This program was initially designed to encourage employees to submit their ideas for doing tasks more efficiently, cutting administrative costs, using our computers to automate paperwork, or implementing any other productivity improvement. It is also a vehicle for communicating a question or comment, anonymously if desired, to any manager in the Division. The Speak Out office is a "traffic director" for the suggestions, making sure they get to the appropriate managers for response. Each manager who receives a Speak Out is responsible for discussing the idea with the originator to make sure that the idea is clearly understood and submitted formally through the Speak Out office to insure closure. Each originator whose idea is implemented receives an award. These awards range from a small gift, (e.g., coffee cup) to cash awards of up to $7500. Awards made for ideas that result in tangible cost savings are based on approximately 20% of the first year's savings up to the maximum of $7500 per idea. There is no limit on the amount of money any employee is eligible to receive in any one year.

After just a few years of focusing on the area of productivity, the Speak Out program had generated so many ideas that the Division Management felt it could be used as a program to encourage employees to send in ideas for new products and services. Any employee with an idea for a revenue-producing product is now eligible for the same type of award described above.

Recognizing our individual contributors is an integral part of this program. Each month, photographs of all employees who have had ideas implemented during the month are posted on a central bulletin board with their names and a brief description of their idea. This recognition not only recognizes the originator, but introduces other employees to the new procedure or improvement that has been made. In addition, the company newspaper usually publishes an article about any employee receiving a large monetary award.

Over the past three years, the volume of suggestions received by the Speak Out office has increased from an average of 20 to over 70 ideas per month. It is estimated that over $200,000 in cost savings was generated through this program in the fiscal year 1985.

Employee participation groups, or **PULSE TEAMS** are also an important part of the productivity effort at B&W. Each PULSE TEAM comprises a group of employees who either come from the same work group or have common job functions. Team members meet for an hour each week to discuss work-related problems they are having and propose viable solutions.

Team ideas are also evaluated for an award in the same manner as the suggestion system. The climax of the team's efforts is to make a presentation to top management of their recommendations. In all cases, management has received these recommendations positively and has taken steps to address the identified problems. This approach not only solves problems, but provides visibility to those team members responsible for coming up with the solution.

Professional Development

Training is an important part of the professional development of NPD employees. There are three avenues through which employees can receive formal training: in-house courses, off-site seminars, and tuition refund for those pursuing a recognized course of instruction at accredited institutions.

The Education and Development Unit employs three full-time professional instructors to present courses in the areas of management development, technical skills, and communication/human resource development. These courses range from Problem Solving/ Decision Making to Personal Computer Training to Business Writing.

Occasionally an employee will have the need for specialized training not offered in-house. A comprehensive file of off-site courses is maintained by the Educational and Development unit. This type of training is encouraged and supported through the Division at all levels.

In addition, a library of audio- and videotapes and books is available to employees to encourage self-improvement.

Automation

We see significant further productivity gains on the horizon as we automate various business activities. The several hundred terminals, work processors, and personal computers currently scattered throughout the Division are helping to make work easier and generate material faster in everything from word processing to computer-aided engineering to project management.

A paperless electronic mail system (eMAIL) also has been installed and employees with terminals are encouraged to use this method to communicate. eMail is also used to transmit messages to customer facilities on the West coast and has been helpful in overcoming communication problems caused by the time differences.

B&W has installed an **Information Center**, which is a walk-in facility providing various computer equipment, software, and instructors to give advice and consultation on business applications. The Information Center staff holds seminars and training courses on the use of all in-house software. They also help users to configure their personal computers.

The very nature of our business necessitates the generation of a large volume of documents. Storing and easily retrieving these documents is mandatory and NPD is in the process of installing an electronic system to do this. This system will allow technical and non-technical employees to initiate a document on a terminal, send it electronically to a central computer system, and allow other users to access the document via keyword search.

Employees have the benefit of using B&W's corporate discount when purchasing personal computers and supplies for their own personal use. In addition, the company has several portable personal computers that are available for employees to take home overnight or for a week-end to learn various applications software or to perform work-related tasks.

A system that allows the budgeting to be done electronically has been installed. This system has eliminated 90 percent of the paper requirements for budgeting, and decreased the managerial time required for budgeting by two-thirds.

There are numerous other Division-wide as well as local automation projects that have been developed to make NPD more productive, and thus, more competitive.

Communication

Disseminating vital information quickly and accurately is important in maintaining a well informed and productive work force. In addition to informal discussion between managers and employees, NPD has used such instruments as newsletters, bulletin boards and employee meetings to communicate news.

The **Productivity Newsletter** is a bimonthly periodical that gives tips on personal productivity (time management, how to be a good supervisor, etc.) as well as communicates ideas of interest on who has done what to improve the Division's productivity. The **Information Center Newsletter** provides news on the latest software and training courses, and offers tips for computer users.

As mentioned previously, the eMAIL system is used frequently to deliver short messages, thus avoiding "telephone tag." It also can be used to broadcast general announcements.

Bulletin boards are scattered through the facility and are updated frequently with information on the latest contract awards, organizational changes, and items of general interest.

Of course, the most effective type of communication is face to face and our Division management is committed to making that contact happen. Each Manager frequently "walks through" his area to get to know the employees that work for him as well as to recognize them for their individual contributions. Unit and section meetings also help to communicate the latest business news and any changes in Division policy or organization. The Division Vice President holds "Management Breakfasts" six or eight times a year to discuss business news from both the Division and Corporate perspectives. Twice a year, we have a "State of the Division Address" in which the Vice President meets with all employees to review accomplishments, present goals and discuss the business outlook.

Performance Improvement

Measuring individual as well as Division-wide performance is a necessary part of any productivity improvement program. B&W has a "Performance Appraisal Program" that is a structured annual review of each employees's performance. Managers are responsible at the beginning of the work period, to discuss with each of their employees their specific job requirements and objectives. Performance against these goals are discussed informally throughout the year. On a more formal basis, however, managers take the time once a year to discuss privately with each of their subordinates his or her performance against the previously set objectives.

In addition to individual performance, departmental and divisional goals are established and tracked periodically. One example is the **Key Indicators** programs, which is a graphic display of performance in various product lines and departments. These charts are updated monthly and posted throughout the facility.

Summary

Productivity and quality are concerns that are uppermost in the minds of B&W management and employees. Efforts to increase productivity are visible across the organization and range from the mail room to the Vice President. These and other efforts have helped B&W to maintain its competitive position and become a leader in the energy business.

Biography

Nancy A. Torrence, has an undergraduate degree from North Texas State University and an MBA from Lynchburg College. She is currently Business Planning Analyst at Babcock & Wilcox's Nuclear Power Divison in Lynchburg, Virginia. For three years she was sponsor and coordinator of B&W's productivity program. Under her direction B&W has received state and national recognition in productivity improvement and won the U.S. Senate Productivity Award in 1985. Nancy previously spent six years in B&W's International Business Marketing Department. She is on the board of directors of the International Association of Quality Circles (Central Virginia Chapter), is a member of the National Association of Suggestion Systems and frequently speaks and writes on productivity and Quality Circles.

I: Program Evaluation and Research

Fostering Creativity: A Consumer Report on Multiple Techniques

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A major challenge in using employee involvement to achieve a competitive edge involves building a flexible, responsive work force. Developing, nurturing, and enhancing the creative abilities of circle members through the use of structured problem-solving techniques will help achieve this goal. With over 100 techniques available, selecting the appropriate one can be confusing. This paper introduces a framework for choosing techniques. Three critical variables in technique selection are explored: user objectives, quality requirements, and technique appeal. Survey results from over 400 users point to those techniques they like; those they'll never use. Implications for quality circles interested in aligning themselves with tomorrow's organization are examined.

Why Creativity?

QC's, like their patron American enterprise, are subject to velvet ruts. They get comfortable with the familiar, routine way of doing things. Industry is only now awakening to the high price of velvet ruts: erosion of competitive advantage and a corresponding decline in sales.

Our national consciousness is becoming increasingly aware of the hard lessons change has to teach us. Change exists. Although it is imperceptible at times. When the slow pace of change seduces us into a false sense of security, the results are obsolescence and eventual disappearance.

To survive QC's must join their industrial sponsors in acknowledging and responding to change. And in responding, they must learn to let go of the comfort, familiarity, and predictability of their own velvet ruts.

Nurturing creativity can pay off in multiple ways for QC's. Expansion of the repertoire of problem solving techniques can help to attract and retain members. Leaders can provide new challenges and support employee development with the introduction of additional techniques. This is especially important during the mature phase if the Circle is to remain vital.

Circles have a rich history of contributions to both cost savings and the enhancement of the quality of the employee's work life - two key issues for business.

A new frontier now presents itself to circles: to help their companies adapt and cope with the ever-changing economic environment. Like a high performance athlete, industry needs stretch, speed, and range of motion, as well as ability. These performance attributes can only come from its people. The introduction and use of a variety of problem-solving techniques will build a flexible and responsive work force.

To achieve competitive advantage, a business must focus on a product or service attribute that is both important to the customer and that they can produce/deliver better than their competitors. Broadening the techniques available to circle members can help sharpen their sensitivity to customer needs and increase their ability to identify efficient, effective ways to satisfy these needs.

Which Techniques?

It's clear that more than one approach is called for. However, selecting the appropriate tool can be a challenge. Each of the techniques has advantages and disadvantages. The issue then becomes - how to choose from among over 100 identified problem-solving techniques.

One approach to selecting techniques is to match the specific features of a technique to your desired result or outcome. This approach requires understanding the differences in the techniques and being able to specify what it is you want to accomplish with the technique.

Techniques can be differentiated by three critical factors.

1. The kind of information they produce and the objective that information serves best.
2. The quality of the information they produce.
3. Their appeal to the user.

Specifying desired outcomes begins with understanding what objectives you want to accomplish and how they relate to the multiple and distinct stages and activities involved in problem-solving.

Both active participants and observers of the problem-solving process have described the experience as a series of discreet stages marked by unique activities and outcomes. When you can identify these outcomes, you can match techniques to the problem and produce results more efficiently and effectively. Arthur B. Van Gundy, Jr. in Techniques of Structured Problem-Solving, using a three phase problem-solving model, has grouped over seventy techniques according to this relationship between objective and result.

To specify quality requirements the problem solver must recognize that creative ideas may occur on a wide spectrum, from the mundane to the divine. For practical, business purposes the continuum is somewhat more limited, ranging from the adaptive to the innovative.

Two well known problem-solving systems illustrate these differences in idea quality. Kepner-Tregoe in the Rational Manager describe a seven step process for analyzing problems and a separate seven step process for decision-making, with a unique technique to assist in each step. The ideas these highly structured, analytical, logical, and systematic techniques produce can be characterized by their precise fit with the original problem statement, their relative familiarity and their similarity to known solutions. They tend to produce small degrees of improvement on existing ideas.

George Prince, father of Synectics, approaches the problem-solving process with quite a different set of techniques for each phase. The ideas produced using Synectic techiques can be characterized by their remote relevance to the original problem statement and a high degree of fancy. They tend to produce novel departures from established practices and break-through technologies.

What do users look for in a problem-solving technique? When asked to evaluate 15 techniques, four themes emerged: attractiveness, effectiveness, suitability, and intentions. The attractiveness of a technique was a function of its familiarity and how enjoyable the using experience was. The effectiveness of the technique was a function of how well it accomplished the objective and the quality of the results it produced. Suitability was expressed in terms of fit, match, or appropriateness to the normal problems encountered. Intentions reflected the assessor's plans to use the technique at a future date.

Survey Background

1. Data was collected from participants in a creative problem solving program.

2. The design of the course included three days of training in problem-solving techniques. The learning sequence involved an explanation of the technique - theory and procedure; a demonstration with a case problem; and practice/application to an actual company problem.

3. Fifteen techniques were presented. Technique selection was based on criteria related to desired objective and quality of outcome.

   a. The problem-solving model promoted by the Creative Problem Institute (CPSI) at State University of NY in Buffalo, NY was used to specify the desired objectives. Techniques were chosen according to their fit with each of the five stages of the CPSI model.

   b. The Targeted Innovation model developed by Stan Gryskiewicz, Center for Creative Leadership, Greensboro, NC was used to specify quality requirements. Techniques were selected to represent three categories of product quality, ranging from Adaptive to Innovative.

   c. Three techniques for each of five problem-solving stages were selected and organized as depicted in Figure 1.

4. Following exposure to the fifteen techniques, users were asked to evaluate their satisfaction with each of the techniques.

Results

How did they judge the fifteen techniques? Overall, users preferred the techniques that produced more adaptive products. These techniques tend to be more

TECHNIQUE SELECTION MATRIX

Problem Solving Stage	Creativity Continuum		
	Adaptive <------	------	------> Innovative
Fact Finding	Specifying the Problem	Performance Analysis	Analogies
Problem Finding	Open Questions	Breaking it Down	Fanciful Wish
Alternative Finding	Brainstorming	Visual Connections	Guided Fantasy
Solution Finding	Must/Wants	Criteria/Idea Grid	Itemized Response
Acceptance Finding	Potential Problem Analysis	Force Field Analysis	Features, Advantages, and Benefits

Figure 1

familiar, e.g. brainstorming: and more rational/analytical, e.g. "specifying the problem". Exceptions to this trend were Must/Wants and Criteria-Idea Grid. Users found these overly complex and tedious, requiring more effort than the results warranted.

The techniques they preferred the least were the unfamiliar and fanciful, those that produced more innovative products, e.g. Guided Fantasy. While users found these techniques enjoyable, they judged them less appropriate for the type problems they were required to solve.

In terms of the problem-solving model, the techniques associated with Solution-Finding or the evaluation stage were the least likely to be used. This suggests that the techniques did not offer a strong enough incentive to switch from the user's present practice. Anecdotal evidence points to users employing hip-shot, gut feel criteria as their primary decision-making practice. Survey results would indicate this practice is producing satisfactory results.

Implications for Quality Circles

Left to themselves, users are likely to choose techniques which are familiar and produce the more routine, predictable responses. For quality circles this will result in missed opportunities, in limiting the contributions they make to a narrow range of organizational issues, and in the potential for extinction.

To prevent this, circle leaders need to take three steps. First, they must provide opportunities to make the strange familiar. This can be accomplished by scheduling practice in the more fanciful techniques. With repeated exposure, users will develop comfort with the intuitive, playful aspects of these techniques.

Leaders must help circle members recognize and buy into the need for these different approaches. This can be accomplished by scanning the organization environment for a broad range of issues. Places to look are the strategic plan; the R&D department; the marketing department. These areas will surface the more futuristic problems/opportunities that require innovations and thus demonstrate the need and appropriateness of the more fanciful techniques.

Lastly, circle leaders must create new structures to nurture and support circle efforts to expand to more innovative techniques. Training, rewards/recognition, feedback are all areas to explore for ideas. When practices consistent with innovative problem-solving are implemented, individual circles and members will be reinforced in their efforts to grow and develop.

Biographical Information

Mary C. Bostwick is Management Development Specialist at Alexandria Hospital and President of Human Resources Strategies, Washington, D.C. She has over 17 years experience in the Human Resource Development field; and has been teaching creative problem-solving techniques since the early 1980's.

Joseph L. Gelmini is Manager-Training at Norfolk Southern Corporation. He has over 10 years experience in Human Resource Development and has been conducting training in creativity and problem-solving techniques for much of that time.

Evaluating The Quality Circle Activity: An Effective Leaders' Circle Project

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Evaluation of a quality circle activity can be effectively accomplished as a leaders' circle project. Guideposts' leaders' circle did just this, providing a valuable assessment of the overall circle activity for the organization while at the same time completing its first project as a working team.

At just about the time that I came on board as facilitator, Guideposts was ending its quality circle training period and its formal contract with the consulting firm of Quality Circle Systems, of Holmes, New York. As their last official contract duty, QCS had composed a report on our circle activity to date, describing our progress toward goals, pointing out any weak areas and providing recommendations for strengthening the circle activity. In an overall positive report, one of the recommendations was that at the eighteen-month point (after training), we should undertake our own evaluation of the circle activity as a comparison with the consultants' findings. It was suggested that we evaluate how members perceived the progress of the circle activity. We should attempt to gauge whether members understood the goals that had been established for quality circles at Guideposts, and whether they felt that we were, in fact, working toward those goals.

During the Steering Committee meeting in which the report was discussed, it was suggested that I might be in the best position to make this type of evaluation based on my daily contact with circle members.

As I considered how I might go about performing this evaluation task, I realized that it would make a perfect leaders' project. The leaders would feel comfortable because the people involved in the evaluation would be their peers; the leaders would gain the satisfaction of having provided a meaningful service to the upper management sponsors of quality circles, and they would reap the benefits of having created and completed their first leaders' project. Therefore, with the approval of the Steering Committee, I approached the leaders' circle with the suggestion that they consider this evaluation as a project.

The leaders decided to employ a brainstorming format to make their decision. This took on the character of whether they wanted to accept this evaluation task as a project, what their chances of a successful result would be, and how much value they could provide to the company by completing the project. The consensus opinion was that the project would not only provide a valuable assessment for the Steering Committee, but it would also give the leaders an opportunity to look at their own circles in conjunction with the entire circle activity.

The leaders' circle notified the Steering Committee that they would like to take on this project, which they entitled, "Self-Evaluation of Guideposts' Quality Circle Activity." The Steering Committee gave the leaders free rein in the design of their evaluation instrument, requesting only that the leaders make a preliminary presentation to them for their approval before beginning to administer their evaluation program.

The project steps unfolded as follows:

1) Decision on Type of Evaluation:

In small groups, the circle members researched and reported on the many different types of evaluation methods that could be employed, from a very technical, statistical analysis to the most informal type of interview report on members' feelings about quality circles. The leaders read articles and viewed video tapes on circle evaluation techniques. From past copies of the IAQC's Annual Conference Transactions, the Quality Circles Journal and the Quality Circle Digest, they learned of other companies that had evaluated their activities, and wrote to many of them for advice.

After reviewing all the available material, the leaders decided on their method of approach. Because of their lack of pure statistical knowledge, they decided to pursue a more "idea oriented," rather than a number-oriented evaluation. And since our Steering Committee was already in the process of developing a cost/benefit tracking system for our circle projects, the leaders decided on a personal, rather than an organizational, slant for their evaluation. Finally, the leaders voted to proceed with a written survey that would measure all members' feelings about their knowledge, attitudes and sense of ownership in the quality circle concept.

2) Composition of Survey:

After reviewing some examples of written surveys (on various subjects), it seemed that the more questions or statements the survey contained, the more objective the overall responses would be. The leaders therefore decided to compose a 60-statement survey to be administered to all quality circle members. The survey respondents would rate each statement on a 1-4 scale of "strongly disagree" to "strongly agree." The leaders chose to use statements rather than questions, because they felt that questions answered in a "yes/no" format would not provide any range for analysis; questions answered in a comment format would be very difficult to analyze, and also would not provide for a numerical scoring of the survey. The chosen 1-4 scale for statements, however, would provide for a numerical range of scores that could be analyzed on the basis of emerging trends.

The composition of a 60-statement survey seemed at first to be a very formidable task, but when five general categories were established within the survey, the writing of twelve statements for each category became quite manageable. The leaders divided into five teams, and each team composed the statements for one category. Then the circle as a whole considered all the statements and voted on each one. After some changes, the sixty survey statements were finalized.

The five survey categories were:

A) Attitudes About Quality Circles, which measured members' feelings about whether quality circles were worth their time and effort;

B) Attitudes About Relationships With Management, Co-Workers and Other Departments, which measured members' feelings about management support and recognition by others, of members' efforts in the quality circle activity;

C) Knowledge About Quality Circles, which measured members' feelings of confidence that they understood each of the steps in the quality circle process discipline;

D) Knowledge About How Guideposts Operates, which measured whether members felt they had learned more about the workflow through their own department and throughout the company from their involvement in quality circles; and

E) Circle Accomplishments, which measured whether members felt their circle projects had made a difference to the company.

Although the survey statements were written for each specific category, the categories themselves were not presented, and the statements for each were dispersed throughout the survey. There was no area provided on the survey for member comments, and no personal or circle identification was requested, because the leaders felt that anonymity would be an important issue with circle members.

3) Approval By Steering Committee:

When the leaders had finished composing the survey, they made a progress report to the Steering Committee. They explained the survey concept they had chosen, presented the completed survey and outlined their plans for administering the survey to circle members.

The Steering Committee gave their approval of the concept and administration plans at this presentation. The Committee members took copies of the survey away from the presentation to look over more thoroughly, and returned their individual approvals to the leaders within a week of the presentation.

4) Administration of the Survey:

The leaders had estimated that the survey would take approximately thirty minutes to complete. The surveys were given to circle members during one of their regular meetings, and the leaders also completed the survey as part of their individual circles. The leaders explained the purpose of the survey to the circle members and reassured them that their responses would be used only as a part of the total survey score for all of Guideposts' twelve quality circles. The total number of respondents to the survey was 68 circle members. Allowing for absences and other pressing circle business, the survey was completed within a two-week period.

5) Compiling of Survey Scores:

The survey scores were compiled on a weighted average basis, and the scores were then graphed on a scale of 1.0 to 4.0. A graph was made for each of the five survey categories as well as one for the overall survey.

When the leaders began scoring the survey they discovered a major problem. On the 1.0-4.0 scale, 2.5 would be the midpoint, and the leaders made the general judgment that scores above the midpoint would reflect a positive feeling among respondents, and scores below the midpoint would indicate a negative feeling. During the actual scoring, however, there seemed to be absolutely no trend for high or low scores, and the leaders soon realized that they had not considered the tone of each statement when composing the survey. For example, a statement such as "I feel that quality circles are worth my time and effort" is positive in tone, and the most favorable response would be 4.0, "strongly agree." On the other hand, a statement such as "I feel that quality circles are a waste of time" is negative in tone, and the most favorable response here would be 1.0, "strongly disagree." Therefore, the leaders realized that equally favorable (or unfavorable) attitudes could produce responses of both 1.0 and 4.0, which would, of course, prevent any type of scoring trend from emerging.

When this problem was discovered, after all the surveys had been administered, it seemed a major setback to the leaders. If they had only realized this beforehand, they could easily have changed the wording for various statements (e.g., "I feel that quality circles are not a waste of time") so that all would be positive in tone. They did not want to make the changes at this point, however, because that would entail a re-administration of the survey to all circle members, and the leaders felt this would damage the survey's credibility in the minds of the respondents.

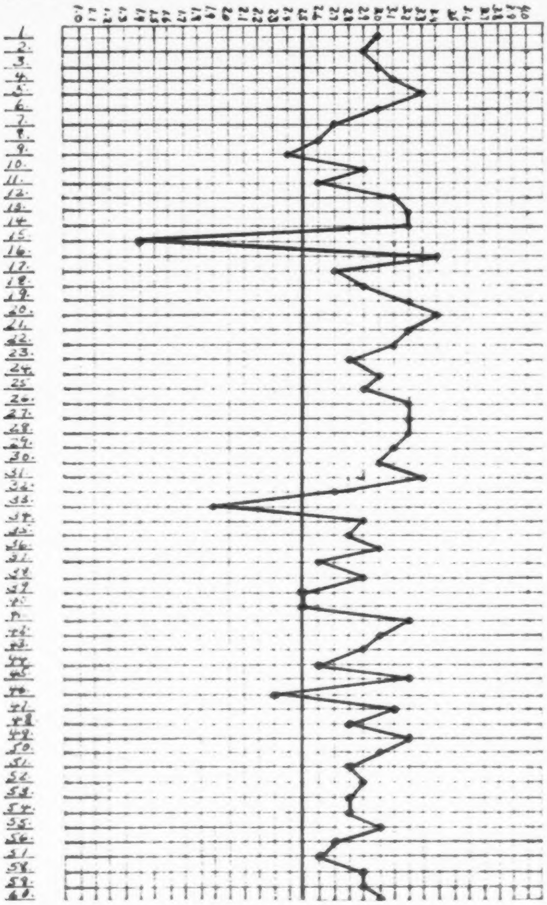
After some reflection and discussion, the leaders came up with a solution that proved effective. They went through the survey and marked all the statements they felt were negative in tone. For each of these, they simply reversed the point values, so that 1.0 indicated "strongly agree" and 4.0 indicated "strongly disagree." This produced the result that all responses that reflected a positive attitude about quality circles would have a high score, and all responses that reflected a negative attitude would have a low score.

When the surveys were rescored and regraphed, a generally positive trend emerged on the overall graph, as had been expected. It should be emphasized here that the point values for these negative statements were not changed to manufacture a positive trend. If a negative trend had emerged on the overall survey graph, it would have been disappointing, but acceptable. It was the lack of any trend that alerted the leaders to the fact that a problem might exist and sent them back to re-examine the survey statements, which in turn led them to the discovery of positive and negative statements.

While the leaders' solution produced accurate survey scores, they realized that the problem could have been prevented; and given the opportunity to conduct another survey in the future, they will obviously compose their statements with more forethought. However, this problem is most likely typical of the type of error made by a person or team trying to perform a task for the first time, and the process of detecting and solving the problem proved a valuable learning experience for the leaders.

6) Analysis and Recommendations:

After scoring the survey, the leaders analyzed the results. The final scoring produced an overall survey graph with a generally favorable trend, as pictured below:



As can be seen, all but six responses scored above the midpoint. Of those six, four were on or close to the midpoint, and the leaders felt they were within the range of the general trend of the responses. Statements 15 and 33, however, were conspicuously below the midpoint and out of the general range of all other responses. The leaders felt that these two statements warranted investigation. They decided that during their next circle meetings they would discuss the two statements with their members to determine the validity of the low scores. They would then report their findings back to the leaders' circle.

Statement #33 was "Quality circles don't get enough recognition from non-members," which received a relatively low score of 1.9. In discussions with circle members, it was established that in members' own work areas, those people who had opted not to join a quality circle at the outset were generally quite negative about them. These were the people who looked on circle meetings as "an hour off from work." They were the ones who taunted members about slow results, and were always ready to label any project setback a failure. Members felt that people in other departments (where there were no circles) tended to be indifferent, mildly interested, or positively supportive.

The general assessment of all negative reaction was that it came from those people who had had the opportunity to join a circle and had chosen not to. And since this was the dominant opinion as reported back by all leaders, it was decided by consensus that the low score of 1.9 for statement #33 was a valid score.

Statement #15 was a different case, however. This statement was "My relationship with my supervisor has improved because of quality circles," which received the extremely low score of 1.4. This low score was surprising to the leaders, because none of them felt there were such poor relationships with the supervisors in their work areas as the 1.4 score would seem to indicate.

Through circle discussions, it was learned that where members felt that their relationships with their supervisors were fair, the quality circle activity hadn't made any noticeable difference. In most areas, circle members rated their relationships as good to excellent, and felt that there was no real room for improvement from any source. Thus, both positive and negative attitudes could produce low scores for this survey statement.

From this information, the leaders concluded that the score for this statement was not valid, and that it had possibly been poorly written. In looking through the survey for a comparison with other statements, the leaders noted statement #34, "My supervisor has been very helpful in making our circle succeed," which received a score of 2.9. This higher score, coupled with the information provided by circle members, confirmed the leaders' opinion that statement #15 had been poorly written and should therefore be eliminated from the survey report.

The leaders then made a written analysis of all survey scores. They analyzed the scores by category, discussing the trend of each area and making recommendations for future action.

For example, the category receiving the highest scores was C), Knowledge about Quality Circles. These high scores (2.9 to 3.4) were taken as an indication that circle members do feel that they understand the skill elements of the quality circle process and their purposes. The recommendation in this case was to reinforce members' good understanding by continued adherence to the process discipline and periodic skill refreshers during circle meeting times.

Category B), Attitudes About Relationships with Management, Co-Workers and Other Departments, contained statement #33, "Quality Circles don't get enough recognition from non-members" (as described earlier) which reflected the members' feeling that non-members in their own work areas tended to be negative about members' project efforts and about quality circles in general. A careful analysis of all statements in this category showed that statements dealing with managers, supervisors and people in other departments received higher scores. Members felt that management had been supportive from the outset; that supervisors' support had grown in proportion to their involvement in the quality circle activity; that people in other departments showed genuine interest when a quality circle project affected their work area; but that non-members in circle work areas remained negative in spite of efforts to convince them of the benefits of quality circles.

The leaders' recommendation in this case was to re-emphasize to all employees that they could join a circle at any time, even if they had previously declined, and to create opportunities for members to publicize their project successes to their co-workers and explain the circle skills and techniques to them. One suggestion for implementing this recommendation was to invite all co-workers to brainstorming sessions for new projects, and to management presentations.

All five survey categories were discussed in the above manner, as was the overall survey. Any particularly high or low scores were discussed individually, and a general analysis of the category scores was presented. Based on the analysis, recommendations for corrective action or continued reinforcement were given. These analyses and recommendations, along with the score graphs for each survey category, became the bulk of the leaders' final report to the Steering Committee.

7) Final Report to Steering Committee:

A final report was presented to the Steering Committee approximately six months after the project was begun. With the approval of the Steering Committee members, the supervisors from the circles' work areas were also invited to this final presentation.

The leaders gave a brief recap of their previous, three-month presentation for those people who were not present at that time, and then presented their final report.

A brief introduction to the evaluation project was presented, in which the leaders explained how they had composed and administered the survey. They then discussed the scoring problem and its solution of reversed point values for the negative-tone statements, and the elimination of statement #15 due to its invalid score. An explanation was given of the five survey categories, and for each, the score graphs were shown. The analysis of each category's scores was summarized, and the recommendations were presented. Finally, a summary and recommendations for the overall quality circle activity were presented.

All elements of this presentation were contained in the leaders' final written report, as was a copy of the survey itself, an explanation of each survey category, and the score graphs for each category and the overall survey. A copy of this written report was given to each person who attended the presentation.

The project was considered a success by both the Steering Committee and the leaders. The Steering Committee had an evaluation of the progress of the institutionalization of the quality circle activity at the 18-month point, and they also had an instrument for repeating this assessment on a semi-annual or annual basis for the purpose of gauging change. The leaders gained the satisfaction of having created something valuable and permanent for the organization, and from their survey analysis and recommendations, they had a wealth of ideas for future leaders' circle projects.

This project can be adapted by virtually any leaders' circle, and will provide a twofold benefit: The project work will help create a feeling of teamwork and commitment among members of a fairly new leaders' circle, and the finished product will be an evaluation instrument custom-tailored to the circle's own organization.

Biographical Information

Diana Conklin is the Quality Circle Facilitator for Guideposts Associates of Carmel, New York, the publisher of Guideposts Magazine, as well as inspirational books, records and tapes.

After several years as a staff writer for SCM Corporation's Media Department, Diana joined Guideposts in 1984 as Training Facilitator, and soon after became the full-time facilitator for Guideposts' twelve quality circles.

Diana holds a Bachelor of Professional Studies Degree from Pace University and a Master of Arts in English from New York University.

Valuing Intangible Benefits

Michael Everett, Ph.D.
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This presentation will lead participants through a simple procedure for putting a dollar value on difficult-to-measure interventions. It may be used to weigh the value of training efforts, an overall employee involvement program, specific work improvements, or other intangibles. Participants will develop a cost-benefit for attending the IAQC conference.

Description

A major problem in evaluating many work-related improvements is placing a dollar value on the impact of the intervention. Numerous studies have been conducted by evaluators in order to determine a valid and easy way of meeting this need by analyzing the value of job performance. The technique which results from this research may be applied to measure the impact of work interventions such as training or employee involvement efforts.

A cost accounting procedure called "standard costing" was used initially to determine the contribution of each employee to the profits of a company. This procedure is extremely detailed and complex, involving such considerations as cost estimates for each piece of material machined, direct and indirect labor costs, overhead and perishable tool useage.

More recent research has shown that estimates just as accurate as those determined by cost accounting may be obtained by using "expert" judgements, avoiding the detail and complexity. This procedure calls for experienced supervisors to estimate the dollar value of the yearly output of employees at three points on the performance continuum. These expert estimates are accurate because:

- The standard used by the supervisors is the estimated cost to the organization of having an outside firm provide the same products or services. In many occupations, this is a relatively concrete standard.
- The individual tendencies, biases and random errors of each person is controlled by averaging across a number of supervisors, thus increasing the overall reliability and accuracy of the final estimate.

Instructions

Step 1.

Select a work area—function, department or some other logical unit—for study. Select experienced supervisors to provide job performance estimates. Provide each supervisor a copy of the questionnaire at the end of this evaluation technique. Review the questionnaire and the information it contains. Ask each supervisor to independently estimate the value of the average (50th percentile) employee within the work area. You may record their estimates on the Job Performance sheet at the end of this technique or similar form. Average these estimates and indicate the average of the estimates to the supervisors.

Step 2.

Ask each supervisor to estimate the value of a low performing (15th percentile) employee. Calculate the average or mean estimate. Repeat the estimation procedure for the high performing (85th percentile) employee.

Step 3.

Calculate the standard deviation (SD_y) of job performance. Using the averaged supervisor estimates, first find the difference between the estimate for the low-performing employee and the average-performing employee. Next find the difference between the high-performing employee and the average-performing employee. The standard deviation of job performance will be the average of these two difference scores.

Step 4.

Calculate the utility of the intervention using the following formula:

$$U = NTSD_y d_t - NC, \text{ where}$$

N = number of people in the intervention

T = the average duration (stated in years or fractions of years) of the intervention effect

SD_y = the standard deviation of job performance

d_t = the average percent increase in job performance as a result of the intervention

C = the average cost of the intervention per employee

Step 5.

The average duration of the intervention's effect (T) as well as the percent increase in job performance (d_t) may also be estimated if actual data is not available. In this case, you might make three estimates:

Pessimistic—the least possible change conceivable

Realistic—what you believe really happens

Optimistic—if the intervention works very well, or what might be obtained under ideal conditions

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(Figure 1)

Estimates

	Low performing (15%)	Average performing (50%)	High performing (85%)
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			
13.			
14.			
15.			

Utility = (Number of people x Time of effect x SD_y x Difference (%)) — (Number of people x Cost per person)

Utility	Number of people	Time of effect	SD_y	Difference (%)	Number of people	Cost per person

(Figure 2)

Supervisor Questionnaire

The dollar utility estimates we are asking you to make are critical in estimating the relative dollar value to your organization of (improvement effort) . In answering these questions, you will have to make some very difficult judgments. We realize they are difficult and that they are judgments or estimates. You will have to ponder for some time before giving each estimate, and there is probably no way you can be absolutely certain your estimate is accurate when you do reach a decision. But keep in mind three things:

(1) The alternative to estimates of this kind is application of cost accounting procedures to the evaluation of job performance. Such applications are usually prohibitively expensive. And in the end, they produce only imperfect estimates, like this estimation procedure.

(2) Your estimates will be averaged in with those of other supervisors of ____________. Thus errors produced by too high and too low estimates will tend to be averaged out, providing more accurate final estimates.

(3) The decisions that must be made about training metnods do not require that all estimates be accurate down to the last dollar. Substantially accurate estimates will lead to the same decisions as perfectly accurate estimates.

Based on your experience with ____________ we would like you to estimate the yearly value to your department of the products and services produced by the average ____________. Consider the quality and quantity of output typical of the average ____________ and the value of this output. In placing an overall dollar value on this output, it may help to consider what the cost would be of having an outside firm provide these products and services.

Based on my experience, I estimate the value to my department of the average ____________ at ________ dollars per year.

We would now like for you to consider the "superior" ____________. Let us define a superior performer as a person who is at the 85th percentile. That is, his or her performance is better than that of 85% of his or her fellow ____________, and only 15% turn in better performances. Consider the quality and quantity of the output typical of the superior ____________. Then estimate the value of these products and services. In placing an overall dollar value on this output, it may again help to consider what the cost would be of having an outside firm provide these products and services.

Based on my experience, I estimate the value to my department of a superior ____________ to be ________ dollars per year.

Finally, we would like you to consider the "low-performing" ____________. Let us define a low-performing ____________ as one who is at the 15th percentile. That is, 85% of all ____________ turn in better performances that the low-performing ____________, and only 15% turn in worse performances. Consider the quality and quantity of the output typical of the low-performing ____________ Then estimate the value of these products and services. In placing an overall dollar value on this output, it may again help to consider what the cost would be of having an outside firm provide these products and services.

Based on my experience, I estimate the value to my department of the low-performing ____________ at ________ dollars per year.

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Management Support Isn't As Critical--But Training Is!

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Everyone in the QC movement has long believed the most important part of a QC program is management support. It turns out that management support is important but not the most critical element for QC effectiveness. The hard scientific research, completed by Zahra in 1982 and the author in 1986, focuses on the most critical variable out of 21 possible predictors of QC program effectiveness.

Background

There has been tremendous growth of Quality Circles in the Unites States. Lawler and Mohrmam (1985) outline the growth when they note:

> In the last five years QC activity has increased dramatically. A 1982 study by the New York Stock Exchange showed that 44% of all companies with more than 500 employees had quality circle programs. Nearly three out of four had started after 1980. Although no hard data are available, a good estimate is that over 90% of the Fortune "500" companies now have QC programs in their structures (p. 66).

The Quality Circle program is gaining increasing utilization in all sectors of the U. S. economy. Not only is there increasing Quality Circle activity within companies but across companies.

The problem was there is very little empirical research. In particular, the time had come for investigative empirical research into the variable(s) influencing participant perceived Quality Circle effectiveness at Hughes Aircraft Company/Space & Communications Group (HAC/SCG).

Since the current HAC/SCG Quality Circle program began in 1982, the management staff had generally supported the program. The importance of management support was also stressed in research in which Keefe (1981) observed "most complaints and failures in quality circles are traceable to a lack of management support" (p. 8). Harrington (1985) surveyed the HAC management to discover out of the 22 questionnaire items, "The highest rated/most positive response was for recommending to management the support of the Quality Circle program" (p.2). "What the Space and Communications Group at Hughes Aircraft Company is finding out is that the manager's role is CRUCIAL in helping these work groups to operate efficiently as possible" (Allen, Howell, and Pavlik; 1985; p. 10). Imberman's (1982) study, with 8 successful circles and 22 non-successful circles, verified the importance of management support in terms of Quality Circles impacting the bottom line.

The Study

This study was designed to determine the most critical variable for predicting QC effectiveness at Hughes Aircraft Company/Space & Communications Group. The study extends the previous 1982 doctoral research of Zahra. Zahra studied 21 predictor variables matched against 5 criterion variables in trying to identify the key variable which predicted Quality Circle effectiveness.

Zahra (1982) concludes in his research summation chapter, "Finally that member training (MT) in quality circle philosophy, voluntary association (V) with circles, and perceived management support (MS) of circles activities are the major contributors of QCE [Quality Circle Effectiveness] is most significant" (p. 273).

With Zahra's research findings in mind, this study focused on those four variables. The criterion variable was:

- o Participant perceived Quality Circle effectiveness (QCE)

The three predictor variables were:

- o Member Training (MT)
- o Volunteering (V)
- o Participant perceived Management Support (MS)

Survey Instrument

The instrument used in this research was a survey questionnaire consisting of fourteen questions. The main purpose of the questionnaire was to gather data from individual Quality Circle participants as to the participants' perceived major determinant of Quality Circle effectiveness. (See Table 1 - Quality Cirlce Questionnaire.)

Reliability and Validity

The questionnaire was tested for content validity by a panel of six divisional Quality Circle coordinators. The panel coordinators judged the questionnaire to be of sound content validity.

The reliability was established using an analysis of variance achieved by Cronbach's (1970) Alpha reliability test. A reliability coefficient of .78599 was obtained, thus the instrument could be considered a fairly reliable instrument.

Procedures

Step One - Permission

* The organizational approval was secured for the research.

Step Two - Administration

* The questionnaires were distributed by the researcher/Employee Involvement Administrator during the circle's regular meeting time. The researcher administered the questionnaire at the beginning of the Quality Circle's meeting for all the California HAC/SCG Quality Circles. (There were two active circles in a classified non-California location.) The researcher explained the purpose of the questionnaire in the following manner:

> This research is being undertaken to assist the Employee Involvement office in identifying the key variable which

determines Quality Circle effectiveness. Furthermore, the questionnaire is not marked in any manner. So all of your responses will remain confidential - please answer the survey questionnaire as honestly as possible. When you have completed the questionnaire, please place them in this large manila envelope.

* The questionnaire generally took from three to five minutes to be completed. The envelope containing the questionnaires was then returned immediately to the researcher. The researcher asked if anyone was absent. All the absentee and non-California Quality Circle participants had their questionnaires mailed to them by the researcher with a cover letter.

Step Three - Follow-up

* The researcher followed-up on the delinquent responses from the absentee and non-California Quality Circle participants. There was a ten percent (eight out of eighty-three) delinquency rate.

* The absentee and non-California participants then completed and mailed back the questionnaire to the researcher. The researcher had to place two follow-up telephone calls to the participants who did not return the questionnaire within one week of being sent out. The end result was a 100% participant response.

Statistics

The data were analyzed using forward (stepwise) inclusion multiple regression. The forward inclusion multiple regression was useful for determining which of the twelve predictor variables (MT1, MT2, MT3, MT4, V1, V2, V3, MS1, MS2, MS3, & MS4), reflecting three constructs (MT, V, & MS), predicted perceived Quality Circle effectiveness.

Nie, Hull, Jenkins, Steinbrenner, and Bent (1975) illustrate the respective Statistical Package for the Social Sciences (SPSS) formulae used: Regression = criterion variable (QCE1 then QCE2) independently matched with each successive predictor variable (MT1, MT2, MT3, MT4; V1, V2, V3, V4; then MS1, MS2, MS3, MS4). The third formula was: Regression = the average of QCE1 and QCE2 (QCE) independently matched with the average of each predictor variable (MT, V, then MS).

In other words, there were three regression analyses conducted. There were two analyses using the criterion variables QCE1 and QCE2, and a third analysis using the average of QCE1 and QCE2. The outcome was expected to be the same after each analysis. The predictor list was specified at 12.

Once the computer analyses were completed the highest correlated predictor variable with the criterion variable was evident.

Results

Using the forward (stepwise) inclusion multiple regression, three regression analyses were performed. The first regression used the responses from question 4, Quality Circle effectiveness 1 (QCE1), as a criterion variable. In the first step, the emerged predictor variable was management training 1 (MT1), which produced an R of .4544 and an R squared of .2065. In step two, the addition of MS1 (management support 1) to the regression equation resulted in an R of .4988 and an R squared of .2488. The addition of MS1 to the regression equation increased the proportion of QCE1 variability accounted for by .0424. (See Table 2 for QCE1 Multiple Regression Table.) There were no further stepwise outputs.

In the predictor equation, the coefficients for the two predictors were significant at the .05 level.

The null hypothesis, that there was no significant correlation between any of the measured predictor variables and the criterion variable QCE1, was rejected.

To summarize, the variability in MT1 by itself accounted for roughly 21% of the variability in the criterion variable QCE1. The addition of MS1 to the equation significantly *increased the predictability of the equation. Together the two predictor variables accounted for 25% of the variability.

The second regression conducted utilized Quality Circle effectiveness 2 (QCE2) as the criterion variable. The predictor variable output was the same as the QCE1 variable outputs. There was only a slight increase in the statistical significance.

In step one, MT1 produced an R of .4996 and R squared was .2498. In step two, the addition of MS1 to the formula resulted in an R of .5793 and an R squared of .3356 which was an increase of .0860. (See Table 3 for QCE2 Multiple Regression Table.)

Again, in the predictor equation, the coefficients for the two predictors were significant at the .05 level.

Once again the null hypothesis, that there was no significant correlation between any of the predictor variables and the criterion variable QCE2, was rejected.

In summary, the variability in MT1 by itself accounted for roughly 25% of the variability in the criterion variable QCE2. The addition of MS1 to the equation significantly increased the predictability. R squared (coefficient of determination) was increased to over one third.

The third regression used an average of the two criterion variables (QCE1 and QCE2) and an average of each of the predictor variables (MT1 + MT2 + MT3 + MT4, V1 + V2 + V3 + V4, then MS1 + MS2 + MS3 +MS4). It is recognized that it is unusual to average Likert scales of different semantic properties, however, in this instance the differences were thought to be minimal.

There was only one step which emerged from the regression output. The only predictor variable reported was member training (MT) with an R of .5730 and an R squared of .2884. (See Table 4 for QCE Multiple Regression Table.)

The regression equation yielded a coefficient for the predictor which was significant at the .05 level.

The null hypothesis, that there was no significant correlation between the predictor variables and the criterion variable QCE, was rejected.

To summarize, the MT predictor variable accounted for 29% (.2884) of the variability.

Conclusion

Although it was predicted management support was the most important predictor variable, the results did not confirm this. Member training was the best predictor, but management support was a significant contributing factor in two instances when combined with member training as well as alone. The participants perceived member training as the reason why their Quality Circles were effective.

The chief predictor of Quality Circle effectiveness was member training. In Zahra's (1982) dissertation research, he indicates under his findings section, "in fact, there was no single variable that consistently emerged as the most important contributor to QCE. However, member training seemed to be stronger than the rest of the explanatory variables in the QCE model" (p. 44).

The obvious question was, why did member training appear to be the principle predictor? This finding points up the critical importance of knowing and applying Quality Circle principles. The members translated their sense of effectiveness into a projection of their Quality Circle being effective. In other words, since this was a study of perceptions--the members felt, "I believe we are effective therefore we are effective."

The interpretation could be the participants felt, due to their training, they could overcome almost any challenge that could come before them. The participants felt they could solve problems that they chose to tackle as well as deal with any problem solving process constraints. It has often been said, "a little bit of knowledge can be a dangerous thing in the hands of the wrong individual." In the case of the participants, knowledge was a very helpful item for their perceived Quality Circle effectiveness.

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Biography

Alan Honeycutt was the Employee Involvement Administrator for Hughes Aircraft Company/Space & Communications Group. In his years with Hughes Aircraft Co., Alan Honeycutt has trained and counseled over 400 Quality Circle leaders/facilitators and other problem solving teams.

As well, Alan Honeycutt has numerous Quality Circle publications in national and international journals.

His current position is managing a multifaceted Human Resources Development function for Magnavox Advanced Products and Systems Company.

Alan Honeycutt holds a Masters in Organizational Behavior from Michigan State University and a Pepperdine University Doctorate in Organizational Management. His Dissertation research isolated the variables which predict Quality Circle effectiveness.

TABLE 1

Space & Communications Group
Quality Circle Participants' Questionnaire

Directions: Please circle your response.

1. How freely did you volunteer to join the quality circle?

freely volunteered				ordered to volunteer
5	4	3	2	1

2. How helpful was the training you received in quality circle philosophy and methods?

very helpful				not helpful
5	4	3	2	1

3. Do you believe that top management has been supportive of your quality circle?

strongly agree				strongly disagree
5	4	3	2	1

4. How would you rate the effectiveness of your quality circle?

very effective				not effective
5	4	3	2	1

5. How much influence did your supervisor or manager have on you joining the quality circle?

a lot of influence				no influence
5	4	3	2	1

6. How much did your quality circle training deal with quality circle philosophy and methods?

very much				not at all
5	4	3	2	1

7. How supportive was your direct supervisor for your quality circle?

very supportive				not supportive
5	4	3	2	1

8. How much influence did your co-workers have on you joining the quality circle?

a lot of influence				no influence
5	4	3	2	1

9. How helpful was your training in quality circle methods?

very helpful				not helpful
5	4	3	2	1

10. How supportive do you believe the organization is of your quality circle?

very supportive				not supportive
5	4	3	2	1

11. How much influence did members of other quality circles have on you joining the quality circle?

a lot of influence				no influence
5	4	3	2	1

12. How much is your quality circle using the training on quality circle philosophy and methods?

very much				not at all
5	4	3	2	1

13. How supportive is your supervisor's manager for your quality circle?

very supportive				not supportive
5	4	3	2	1

14. How effective is your quality circle?

very effective				not effective
5	4	3	2	1

TABLE 2

Criterion Variable QCE1
Multiple Regression Table

Variable	Step	Multi R	R Square	R Square Ch	Bivariate Correlation
MT1	1	.4544	.2065	.2065	.4544
MS1	2	.4988	.2488	.0424	.3522

TABLE 3

Criterion Variable QCE2
Multiple Regression Table

Variable	Step	Multi R	R Square	R Square Ch	Bivariate Correlation
MT1	1	.4996	.2498	.2496	.4996
MS1	2	.5793	.3356	.0860	.4500

TABLE 4

Criterion Variable QCE2
Multiple Regression Table

Variable	Step	Multi R	R Square	R Square Ch	Bivariate Correlation
MT	1	.5370	.2884	.2884	.5370

ticipate, or criticizing people instead of ideas do not lead to a balance of needed roles in a quality circle.

4. Meaningful projects.

The goals of the quality circle process at Mare Island Naval Shipyard are to promote improved teamwork, promote a high quality of work life, and improve productivity. We feel that these goals are closely aligned to organizational goals and therefore enhance management support of the circle program. Our circle's projects should address one or all of these goals in some manner.

5. Management presentations.

The management presentation is an important element of the quality circle process. It is used to communicate with management what the circle is working on and to ask for help in implementing projects. The management presentation also plays a major role in the individual development of circle participants.

6. Posting and following an agenda.

A productive meeting is a very important part of the quality circle process. One of the best ways to have a productive meeting is to have an agenda and to follow it. An agenda gives a meeting direction as well as a tool to measure progress.

7. Circle together for a year.

Although the life span of a quality circle cannot be accurately predicted, we feel longevity is an important indicator of success.

8. Management attendance in meetings.

An effective way to increase management involvement and to enhance their understanding of the quality circle process, is to have management representatives attend circle meetings in their areas. We strive to have a manager attend (even if only for a few minutes) all circle meetings in his/her work area on a monthly basis.

How the Matrix Works

Each facilitator is assigned a number of quality circles, usually ten to fifteen. The facilitator evaluates each circle on each attribute, semiannually, giving the circle a score ranging from zero to one hundred, based upon the circle's performance on each attribute. For example, if a circle met 100% as scheduled during the first rating period and 85% during the second rating period, it would be given 100 points for each period. These points are not cumulative, however. The purpose of having two rating periods is to allow a facilitator to counsel a circle at midway point so that the circle members are aware of how they are performing. This enables the circle to correct their performance, if need be. The facilitator then multiplies their point score by the weighing factor to arrive at a weighted score. The weighted scores are totaled for an overall evaluation. 368 points (80%) is the threshold score to be rated as a "Circle of Excellence."

Benefits of the Model

We have realized many benefits by using this model. For example, the model allows the Quality Circle Office and the Quality Circle Steering Committee to have an overall evaluation of the quality circle process in our organization. Although it is not an overall assessment on all of our goals, it does demonstrate how closely a circle follows the basic quality circle process. The overview allows us to build on the strong points of the process as well as to identify and thereby improve in weak areas. For example, we have found that we need to develop means to improve management involvement in the circle process. Additionally, the model enables us to recognize our excellent quality circles and identify those that need additional facilitation or training. Moreover, the model enables quality circles to evaluate themselves and how closely they adhere to the model quality circle. Finally, this model enables us to identify the quality circles that have the attributes to become self-facilitating. It enables us to break away from circles that no longer need our full-time attention and to concentrate on circles that need additional help, or to expand the process without adding new facilitators.

Conclusion

We have found that the model has been an excellent tool for improving our quality circle program at Mare Island Naval Shipyard. The matrix has been well received by our circles and by management. This evaluation tool allows us to identify our excellent circles and to reward them with the recognition they deserve. Since the introduction of the matrix, we have identified and recognized 24 Circles of Excellence at Mare Island. The recognition at our Spring and Fall luncheons has increased circle enthusiasm and the award system based on the matrix has added a competitive motive to improve the process.

BIOGRAPHICAL INFORMATION

Frank G. Peais - Mare Island Naval Shipyard, Quality Circle Coordinator, has been involved in facilitating quality circles and other problem solving teams since 1981. For the past four years he has been the quality circle coordinator at Mare Island Naval Shipyard where he supervises five facilitators and oversees 60 quality circles. Frank is a co-founder and Executive Director of the North of the Bay Chapter of the IAQC.

Measurement is the Key: Charting Circle Success - A Model for Recognizing Quality Circle Performance

Frank Peais
Quality Circle Coordinator, Mare Island Naval Shipyard

An overview of a "matrix model" which is used as an award score sheet for recognizing excellent circles. This matrix has strong emphasis on the attributes of a model quality circle (as we view them) so that quality circles may apply the model to their own activities. This article includes the matrix, the rationale for the attributes chosen for the matrix, their weights and the results of our using the matrix.

One element listed in most quality circle literature as being necessary for a successful program is recognition. We have many ways to recognize quality circle efforts such as: management presentations, articles in our organizational newspaper, the Spring and Fall quality circle luncheons, logos, and other means. At Mare Island, however, during 1984 we had only recognized one outstanding circle with The Mare Island Circle of Excellence Award. The reason for only naming one circle for the award was that we had no standard or model with which we could evaluate individual circles or the process as a whole. Consequently, we selected for the award the one circle that was clearly head-and-shoulders above the others. Since we knew that we had other circles that were deserving of recognition, we found that we needed a system or means to measure the relative contribution and progress that each circle had made in a year's time.

Recognition and Program Expansion Both Blocked by Lack of Measuring Tool

Another problem we faced at Mare Island was how to continue to expand the quality circle process throughout the organization without going to part-time facilitators or expanding the full-time staff. We decided that the best way to reach this objective was to move some of our circles into a self-facilitating mode or at least to a mode in which they (the circle) would only need intermittent facilitation. We realized once again that unless we had a standard for measuring progress of our circles, we could not determine which circles could move toward self-facilitation.

Decision - Design a Tool to Meet Both Needs

In response to these two needs for a standard of measurement, we decided to develop a model that would: one, help us to identify the excellent quality circles for recognition and two, help us to identify those circles that could move into a self-facilitating mode, thus enabling us to expand our circle program without an increase in the number of facilitators.

The Multi-Attribute Matrix - "A Model for Recognizing Quality Circles"

Development of the Matrix

In January of 1985 the Mare Island Naval Shipyard Quality Circle Steering Committee and the quality circle staff brainstormed to determine what were the basic attributes of a model Mare Island quality circle. After discussing a number of attributes, we produced a list of eight. The attributes chosen were:

1. Regular meetings (85% or more with good attendance top score).
2. Voluntary rotation of circle leadership.
3. Balance of task and maintenance roles.
4. Meaningful projects.
5. Management presentations.
6. Posting and following an agenda.
7. Circle together for one year.
8. Management attending meetings.

There are three reasons why we chose these particular attributes for our model. First, our excellent circles all seemed to possess most of these attributes to some degree, therefore, we felt that the attributes were already proven to be valid ones. Second, these attributes could be objectively evaluated by a facilitator or the circles and circle members themselves. Finally, if followed, this model could guide a circle into a mode of self-facilitation. The eight attributes that we chose, their weight factors, and our rationale for choosing these attributes are as follows:

1. Regular meetings (85% with good attendance).

We feel that this was the most important of the attributes. Basically, we feel that members of a quality circle cannot function properly if they are unable to meet regularly. Regular meetings are also a strong indicator of management's support and commitment to the quality circle process.

2. Voluntary rotation of circle membership.

If the leader of the quality circle is the only person responsible for the circle process and maintenance functions, that person may eventually fold under the stress, or put undue and non-productive pressure on circle members. "Shared leadership" occurs when all members are responsible for performing leadership functions at some point during the lifetime of the group. This type of leadership style eases the burden on the leader and prolongs the life of the circle. It also serves as a self-development process for members of the circle.

Recently I read what I think is a good illustration of this attribute. "Just a thought: Once a leader emerges from a flock of Canadian Geese, the others fall into a neat 'V' formation behind him. By taking the lead, he creates a partial vacuum for those flying to his right and his left. Scientists have found that in this formation a flock can fly 72% farther than an individual goose can fly alone. This is because they regularly rotate the lead position."

3. Balance of task and maintenance roles. In order for a quality circle to function well and reach its goals, it must balance the task and maintenance roles within the group. Task roles such as initiating action, offering information, seeking information, summarizing and testing ideas must be understood and practiced by all circle members. Group maintenance goals such as helping others to participate, harmonizing, compromising, and encouraging must also be understood and practiced by all circle members. Moreover, it is the responsibility of all participants to avoid blocking forces which hinder progress. Practices such as dominating circle activity, using the circle as a forum, refusing to par-

Quality Circle Member Motivation

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Discussion of the motivation which causes the members of Quality Circles to remain in and contribute to their groups. Resource Exchange theory is used to explain member motivation. The research describes the needs of the members and the exchanges that members report as a result of their membership.

The success of a Quality Circle program depends upon the motivation of the participants. Research into the levels of satisfaction of the members of circles, as compared to nonmembers, indicates that the program may not be meeting the needs of the members. Another explanation is that the needs of the members are different from the nonmembers. There is also evidence that the members may perceive the program as providing more for the firm than it provides to the members. Yet people continue to join and remain in the program.

The research described in this paper studied the structure of the needs of the members of Quality Circles and the relationship of those needs to satisfaction. In addition, the research examined the nature of the motivational resources exchanged within the circles. The findings shed some light on the apparent contradiction between the studies into member satisfaction and feelings of equity and their continued involvement in the Quality Circle program.

Analysis of Quality Circle Member Needs

The Quality Circle is generally believed to provide organizations with two sorts of benefits. The first benefit is an improvement in several measures of organizational performance. Though this sort of benefit has not been shown conclusively, several studies (Zahra, 1982; Zahra, Wiebe, and Lundstrum, 1984; Zahra and Wiebe, 1985; and Nale, 1985) have provided evidence that both the members and the nonmembers of Quality Circles perceived the Quality Circle program as improving a wide variety of organizational performance measures including quality and productivity.

The supporters of Quality Circles argue that the second benefit provided by the program is an improvement in worker motivation and therefore their satisfaction and commitment. The evidence here is less convincing. Several studies indicate that Quality Circle members are no more satisfied than nonmembers (Zahra, 1982; Norris and Cox, 1984; Zahra, Wiebe and Lundstrum, 1984; and Nale, 1985).

The findings that the Quality Circle program does not improve satisfaction seems to say that the program does not meet the needs of its members. Another explanation of the findings concerning satisfaction is that the needs of members are different from the needs of nonmembers. One way to describe an individual's needs is in terms of the extent to which the individual possesses Higher Order Needs. The Higher Order Needs include the desire for growth, achievement, challenging work, and autonomy. Possibly, the Quality Circle members possess those Higher Order Needs and can satisfy them through participation in the Quality Circle program. Thus, while they obtain no more satisfaction in their work than nonmembers, however, participation in the program continues because it allows them to meet different kinds of needs.

It is generally perceived that the Quality Circle meets these sorts of needs, therefore, it could be expected that the individuals in an organization who have those sorts of needs would join and remain in circles. A study by Zahra, Lunstrum, and Latham (1984) found that there were no differences in the Higher Order Need Strengths of those that volunteer to join circles and those that do not. That study left open the question of whether or not those who remain in Quality Circles or those who after having been forced to leave involuntarily and now wish to return, have higher levels of Higher Order Needs than those who voluntarily leave or never join Quality Circles.

The stream of research described above raises the following issues:

1. Are the needs of members of Quality Circles different from those that do not belong?
2. Does the satisfaction of the members of Quality Circles arise from those different needs?

To examine these issues, data was gathered from 176 of the members of a midsouth manufacturing firm that has a mature Quality Circle program. The individuals filled out a questionnaire that included the twenty item short form of the Minnesota Satisfaction Questionnaire (MSQ) (Weiss, Davis, England, and Lofquist, 1987) and the twelve item Higher Order Need Strength Scale (HONS) (Hackman and Lawler, 1971).

To answer the first question, the responses to the HONS scale were examined through an analysis of variance. The results of the analysis are presented in Table 1. The analysis examines the extent to which those who are members of Quality Circles, who have a circle in the department and who have a supervisor who is the leader of a circle have different levels of HONS. The analysis indicates that the only significant difference in the level of HONS occurs with the membership in a Quality Circle. Members had a higher level of Higher Order Needs than nonmenbers.

Table 1

ANALYSIS OF VARIANCE HIGHER ORDER NEED STRENGTH

SOURCE OF VARIATION	MS	F
Membership Status	10.777	13.345**
Supervisor QC Leader	9.286	0.355
QC in Work Area	9.890	1.002
		MEANS
Member	Yes	5.95
	No	5.44
Supervisor QC Leader	Yes	5.62
	No	5.75
QC in Work Area	Yes	5.61
	No	5.70

** $p < .05$

If the members HONS are different from nonmembers HONS what about the HONS of those that have left the program and wish to return. They should have different needs from those who left the program and do not wish to return. An ANOVA of the HONS scores of these two groups indicates that the needs of those that wish to return is significantly different from those that do not wish to return (F = 11.58, $p < .001$). On the basis of this analysis of the data generated in this study we can conclude that the answer to the first question is that the members of Quality Circles do have different needs.

To answer the second question concerning the extent to which the satisfaction of the members arises from the differences in needs, the items of the MSQ were factored into its Intrinsic and Extrinsic components (Weiss et al., 1967). An ANOVA was performed on the responses to the Intrinsic elements of the MSQ, which are theoretically related to the HONS, Membership in Quality Circles, and the level of HON (See Table 2). The analysis indicates that the members of Quality Circles do not, as a group, have different levels of Intrinsic Satisfaction than nonmembers. The analysis does indicate that those with HONS do have higher levels of Intrinsic

Satisfaction.

Table 2

ANALYSIS OF VARIANCE INTRINSIC SATISFACTION

SOURCE OF VARIATION	MS	F
HONSB	147.536	3.042*
Membership Status	78.808	1.625
		MEANS
HONSB	Yes	46.92
	No	49.33
Member	Yes	49.41
	No	47.42

* P < .1

After this analysis there remains an unresolved problem, given the differences in the needs of the members and no difference in satisfaction between members and nonmembers then why do the members remain in the Quality Circle program. A possible answer may be found in an examination of the kinds of motivational exchanges that take place in circles. These exchanges can be compared to those that take place in the normal work circumstances. These exchanges may be the reason the members remain in the program.

Analysis of Resource Exchanges in Quality Circles

The discussion at the beginning of the paper presented the results of research that indicates that there is a general perception that Quality Circle programs provide the organization with the benefits of improved quality and productivity. At the same time the members of the circles do not receive an improvement in their satisfaction. This could be seen to create a situation where the organization receives more from the program than those that participate. There is some research on this issue. Zahra (1982) found that the members of the Quality Circles felt that the firm received more from the program than they did. A study by Nale (1985) examined the extent to which there were differences in feelings of equity between the members and nonmembers of Quality Circles. The study found no differences in general levels of equity.

The findings that the members of Quality Circles have different needs than nonmembers, but do not have different levels of satisfaction, along with the findings that there are some feelings that the organization receives more from the program than the participants, raises a question of why the members remain active in the program.

To examine this issue it is necessary to measure the kinds of motivation exchanges that take place in the Quality Circle. Foa and Foa (1974) developed Resource Theory which focuses on the motivational exchanges that take place in social settings. The underlying analogy for exchange theories is that of the marketplace where individuals exchange various resources. The theory classifies resources that are exchanged into six types. A seventh category of resource was recently described in a study of work settings (Berg and Wiebe, 1986). (For a definition of these categories of resources, see Figure 1.) One explanation for the members remaining part of the Quality Circle program, even though they feel the organization receives more than they do, is that the resources that the members receive are the sorts that meet the member's HONS.

To determine the nature of resource exchanges that take place in Quality Circles 82 of the members of the same midsouth firm were asked to complete a second questionnaire. This questionnaire asked the members to list the things that they received from and give to the firm as part of their regular duties. In addition, those who belong to circles were asked to list the additional resources that they receive and give as part of their participation in the Quality Circle program.

Figure 1

Types of Resources

POSITIVE RELATIONS	Expressions of positive feelings of regard, warmth, affection, comfort, friendship, comradery, and togetherness.
STATUS	Evaluative judgements that convey prestige, regard, esteem, admiration, respect, and confirm self worth.
INFORMATION	Advise, facts, opinions, instructions, enlightment. Excludes information that conveys Positive Feedback or Status.
MONEY	Coin, currency, tokens, that have a standard unit of exchange or the things that one can assign a cost of replacement.
GOODS	Tangible products, objects or materials.
SERVICES	Activities that affect the body or belongings of a person. Often constitutes giving ones time, talent, energy for another.
WORK ITSELF	Activities that are peculiar to the place of work, it's environment, the job, task or position.

The answers to these questionnaires were content analyzed into the seven categories of resources described in Figure 1. The results of this analysis are presented in Tables 3 and 4.

The exchanges that take place in the normal work setting were compared for members and nonmembers. Table 3 describes the average number of each resource that individuals reported giving and receiving. The data indicates that the Quality Circle members receive more total resources than nonmembers. An ANOVA found this to be a statistical difference. (F = 4.754, p < .1) An even greater difference was found for the resources given by members and nonmembers. This difference was also statistically significant. (F = 11.786, p < .05)

Table 3

AVERAGE RESOURCE PER INDIVIDUAL

	RECEIVED		GIVE	
	MEMBER	NONMEMBER	MEMBER	NONMEMBER
POSITIVE RELATIONS	.51	.31	.32	.19
STATUS	.35	.22	.16	.00
INFORMATION	.25	.22	.23	.11
MONEY	1.22	1.21	.00	.00
GOODS	.00	.00	.00	.00
SERVICE	.00	.03	1.65	1.32
WORK ITSELF	.64	.33	.07	.07
TOTAL	3.12	2.53	2.68	1.85

An examination of Table 4 indicates that the members gave and received different sorts of resources than nonmembers. The members reported receiving a smaller percentage of their total resourses in the form of Positive Relations, Status and Job Characteristics. These findings would indicate that the members are receiving more of the resources that would meet their HONS. These finding would explain why those members with higher HONS have a higher level of Intrinsic Satisfaction.

Table 4

DISTRIBUTION OF RESOURCES

	NORMAL SETTINGS					CIRCLES		
	RECEIVE		GIVE		RECEIVE	GIVE	RECEIVE	GIVE
	MEMBER	NONMEMBER	MEMBER	NONMEMBER				
POSITIVE RELATIONS	24 (14.0%)	31 (18.2)	12 (9.8)	17 (12.2)	55 (16.1)	39 (14.9)	18 (13.9)	5 (7.7)
STATUS	11 (6.4)	14 (8.2)	0 (0.0)	8 (5.8)	25 (7.3)	8 (3.1)	20 (15.4)	3 (4.6)
INFORMATION	16 (9.4)	11 (6.5)	8 (6.6)	10 (7.2)	27 (7.9)	18 (6.9)	84 (64.6)	46 (70.8
MONEY	99 (57.9)	79 (46.5)	0 (0.0)	0 (0.0)	178 (52.2)	0 (0.0)	0 (0.0)	0 (0.0)
GOODS	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)	0 (0.0)
SERVICE	1 (0.6)	0 (0.0)	99 (81.1)	100 (71.9)	1 (0.3)	199 (76.2)	4 (3.1)	18 (27.7)
JOB ITSELF	20 (11.7)	35 (20.6)	3 (2.5)	4 (2.9)	55 (16.1)	7 (2.7)	4 (3.1)	1 (1.5)
TOTALS	171	170	122	139	341	261	130	65

The next issue to examine is the exchange of resources that takes place within the activities of the Quality Circle. The nature of these exchanges may help us understand why these individuals remain in the program even though they believe the organization receives more than they do. Examination of Table 4 indicates that the resources that the members report receiving the most often are Status and Information. The sorts of resources received in the circle are different from the sorts that individuals report giving in the normal work setting. The receipt of these sorts of resources would meet the HON's of the members of the circles.

One of the more interesting results of this study is another finding, described in Table 4, members gave a smaller percentage of their resources in the form of Service (approximately one-third less) and a much higher percentage in the form of Information (approximately ten times more). The findings are that Information is given and received more often within the Quality Circle than outside of circle activities. This finding becomes even more important when taken with those reported by Nale (1985) and Zahra (1982) that the members of the organization feel that Quality Circles improved the amount and quality of communications among the members of the organization.

It is clear that the Quality Circle is as much a program for sharing the information necessary for the solution of organizational problems as it is a method for improving the motivation of the participants. The analysis of the exchanges of resources gives us some new insight into the way in which the members of Quality Circles have their motivational needs met. They appear to remain in the circle because it meets their needs for involvement in the process of solving problems. This involvement meets the HON's of the members and explains their higher levels of Intrinsic needs.

Implications

These findings have several implications for those who are the managers of the Quality Circle program. First, the Quality Circle program should retain its voluntary character. Not all the members of the organization have the kinds of motivaitonal needs that the circle addresses, thus, they should be free to join or leave the circle depending upon their individual needs. Efforts should be made to encourage as many individuals as possible to give the program a try. If they do not find it consistant with their needs they should be allowed to leave. This voluntary nature will also prevent the nonmembers from feeling that the members are getting more than they do. If they want to receive the same things they only have to join the Quality Circle program. Thus, equitable relationships can be maintained.

Secondly, these results help the facilitators and members of the steering committee to provide justificaiton for the program to the managers who are somewhat leary of the "people" aspects of the Quality Circle movement. The fact that the members of circles see the program as involving the sharing of information resources among themselves and with the organization will highlight the problem sloving and performance improving nature of this people improving program.

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Biography

Dr. Frank Adams Wiebe received his Ph.D. in Business Administration from the University of Kansas in 1975. Since 1978 he has been a faculty member of the University of Mississippi where he is an Associate Professor of Management. He has been involved in educational and research programs involving Quality Circles since 1981. In addition to supervising two dissertations that studied the effect of Quality Circles on the attitudes of members of organizations, he has been carrying out a four year study of a mid-south firm's program.

Dr. Wiebe has published several articles on Quality Circles which have appeared in publications such as: International Journal of Management, The Educational Forum, Management Accounting and Mississippi's Business. He has presented papers concerning Quality Circles before meetings of the International Congress of Applied Psychology, Southwest Academy of Management and three papers at meetings of the International Association of Quality Circles.

Dr. Wiebe has presented several educational programs on Quality Circles before business groups, businesses, and several chapters of the IAQC. He has been a judge at Quality Circle group competitions. He is a member of the International Association of Quality Circles, the Academy of Management, Southern Academy of Management and the Southwest Academy of Management.

Dr. John Berg received his Ph.D. in Psychology from the University of Texas, Austin in 1979. He has been an Assistant Professor of Psychology at the University of Mississippi since 1982. In addition to supervising a dissertation on Quality Circles he has presented a paper on Quality Circles at the International Congress on Applied Psychology.

Dr. Berg has published several articles on Resource Exchange Theory in various publications including Journal of Experimental Social Psychology and Journal of Personality and Social Psychology. He is a member of the American Psychological Association, International Communication Association, International Society for the Study of Personal Relationships, Southeastern Psychological Association and Society for Experimental Social Psychology.

J: Basics for Beginners

Please Don't Reinvent The Wheel!

Betsy Caughron
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Of all the advice that's offered on employee involvement, what are the absolute musts? Most experts agree that certain elements in the Quality Circle process have been proven to be essential for success. The eleven keys to success have, more than any other employee involvement issue, weathered the test of time. This developed presentation will be presented in a fast-paced, humorous, and practical approach involving the audience. Handouts will be provided.

While employee involvement through problem solving is growing in many directions, there are certain basic elements in structure and process that will enhance any problem-solving activity. Whether you are resurrecting a past activity, starting employee involvement for the first time or expanding into Total Quality Improvement, the keys to successful Quality Circles are increasingly appropriate for all groups. I've personally worked with hundreds of activities whose success is directly related to these basics. In addition, the majority of what has been written concerning quality circle success and failure is covered in this basic approach.

While is is assumed that this audience has a clear definition of a quality circle, some issues may be examined in order to further develop effective planning. Breaking the definition apart allows discussion on the specifics.

A QUALITY CIRCLE IS

There may be some good reasons to call your activity something other than quality circles. Preconceived ideas may be one reason to give it a new name. The organization may choose to personalize the approach with an acronym. The fact that some employees may prefer not calling the activity quality circles will not affect success or failure.

A Small Group of People

There is a great deal of evidence that groups of 10 participants or less are much more successful than larger groups. The most important factor is allowing everyone in the group a chance to participate during every meeting. Keeping the group size small will guarantee each member's opportunity to participate.

Who Voluntarily Meet

While there is transition in this area taking place in the quality circle world, voluntarism at the employee level is still an excellent way to build trust and establish a successful base. Depending on the organizational environment, the degree of voluntarism may vary. Factors to consider include the style of management, degree of open communication and other similar activities already in place.

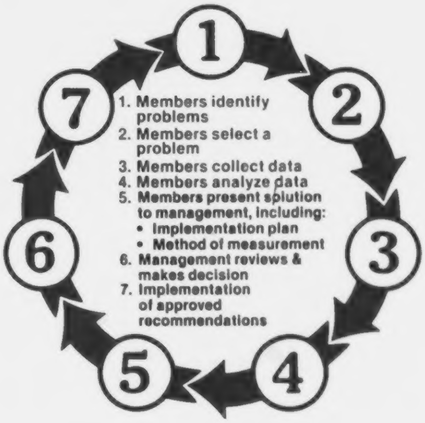
On A Regular Basis

For most organizations throughout the United States, groups meet once a week for one hour. Depending on the schedule or shifts, flexibility may be exercised. The group is usually in the best position to choose the meeting day and time. They know the schedule and pressures of the work environment.

To Identify, Analyze and Solve Quality and Other Problems in the Work Area

If we were to walk into a quality circle meeting anywhere in the United States, the groups would likely be doing one of three activities: identifying, analyzing or solving problems.

The process that the groups use is outlined in the following chart:


1
2
3
4
5
6
7
1. Members identify problems
2. Members select a problem
3. Members collect data
4. Members analyze data
5. Members present solution to management, including:
• Implementation plan
• Method of measurement
6. Management reviews & makes decision
7. Implementation of approved recommendations

1. Members Identify Problems

The average number of problems a group will identify during their first brainstorming session may be high. The list will include a wide variety of problems, a certain percentage of which can be resolved without being selected for further analysis. Anyone in the organization may suggest problems for the group to consider.

2. Members Select a Problem

While anyone can suggest problems for the group, the group should select the problem to analyze. Trust should be shown on the part of management to allow the group ownership of the project. Through their ownership, the group becomes truly committed to quality improvement and seeing the project through to completion.

3. Members Collect Data

After project selection, members will generally find data in their own area within the framework of their jobs. It is very important that groups call upon any experts from their own departments or others that can assist in the collection of data. This data may be used as baseline measurement. At this time, an understanding of the magnitude of the problem is more clearly understood. During this step, the group will organize the data using some type of format: a check sheet, checklist or drawing.

4. Members Analyze Data

Decision analysis using Pareto will help the group visually see the major part of the problem. Stratifying the data allows the group to look at the problem from different perspectives. A weighting factor may be used if appropriate to assist in separating the important aspects of the problem.

The Cause-and Effect problem analysis may be constructed after the main problem statement is defined. Causes are explored through brainstorming. Many of the causes that are explored can be resolved aside from the major causes relating strictly to the project. Cause-and-Effect problem analysis is powerfully effective in exploring many causes and allowing the group to expand their direction.

5. Members Present Solution to Management

After time spent verifying the primary cause, or causes, the group will develop solutions using various techniques. Since the group has baseline measurement from their data, they are in a position to recommend solutions and predict the changes that will result. The group will communicate with the manager throughout the project in order to work toward the most appropriate alternatives. There may be several solutions recommended with data for management to consider. The group will be prepared to present the implementation plan and method of measurement. Measurement is important as historical reference to recognize project improvements. More importantly, measuring at regular intervals allows the improvement to stay in control, not slip back.

6. Management Reviews and Makes Decision

The steering committee should ask all managers with quality circles in their areas to commit their support in the area of response. The members expect and deserve a prompt response. If good communication has taken place through the course of the project, there should be no surprises at the presentation. If a higher level of authority is needed for approval, the group and manager will work together perhaps scheduling a second presentation.

7. Implementation of Approved Recommendations

In most cases, the group will implement the recommended change. If an outside source is needed to complete the implementation, the facilitator may assist with communication to speed the process. A time frame should be established so that the recommendations are not stalled.

It is important to follow up at regular intervals to ensure that the desired results are still intact. The problem-solving process can be expanded with many additional tools as the group grows in scope with its projects. The same process works equally well with variations for task teams and management teams.

In order to maximize the success of the problem-solving process over the long term, a strong structure must be in place. Our experience of 15 years with quality circles in the United States has matured in understanding of the importance of management support, commitment and involvement. The following keys to success are all dependent on management support.

KEYS TO SUCCESS

Substantial Study and Planning Are Done Before Starting

Careful study by the top management group of the organization will allow for greater cohesiveness and greater clarification of the problem-solving potential. The management group should have a thorough understanding of the problem-solving process and the roles of the leader, facilitator and steering committee. In addition, the group should gave a good understanding of the objectives for the activity. There are many possible objectives that quality circles can accomplish within the organization. There is simply no way an organization will know if they have succeeded if they have not determined objectives.

Management is Actively and Visibly Supportive

Dropping in on circle meetings is an excellent way to show support of management. Communicating with the groups and offering assistance can have a very positive effect. Managers as part-time facilitators in other departments not only demonstrate support, but also will increase understanding, communication and expertise. One of the strongest ways to show active support and commitment for the activity is including circle objectives in regular reports. Project completion, training, attendance and growth can all be part of performance of management.

A Functioning Steering Committee Oversees the Effort

A steering committee that has ongoing meetings from the pilot phase through expansion, will experience far more success than those that show their support and involvement only in the early stages. If the activity is to flourish, grow and expand, it is necessary to plan that growth. Time for facilitation, promotion and recognition are but a few of the responsibilities of a functioning steering committee. There are many resources available for steering committees to learn their role and increase their potential success.

A Working Facilitator is Assigned

There are some who feel that facilitation is essential only in the beginning stages of a quality circle's maturity. There is increasing evidence that ongoing facilitation is a key to long-term success. Circles are dynamic, going through lots of changes and encountering many challenges. The facilitator is instrumental in providing the outside perspective to assist with communications and problem solving.

Participation is Voluntary

There is enough written on this subject to fill an entire volume. Attitudes are changing and the status of quality improvement is increasing. As the status of quality improvement within the organization increases, participation will become less voluntary. It will become a part of the organizational environment to be a team member. However, each environment must be analyzed separately. The risk is great to inflict employees with a nonvoluntary approach if the structure is not strong. In order to build success with your first pilot activities, it is highly recommended that a voluntary approach be exhibited. However, there is a great deal that the organization can do to accomplish genuine involvement.

People Building is Emphasized

Every organization should have objectives relating to cost savings from Quality Improvement projects. Labor time is also a concern that can be quantified, exhibiting desirable results. The most outstanding results will occur if management is emphasizing people building as a way to increase quality. Showing support for training, involvement and encouraging management presentations are evidence of people building.

Training is Provided

By now it should be understood that steering committee training is extremely valuable to long-term success. Training facilitators as well as leaders is mandatory. Members may receive their training before they begin problem solving or during their initial meetings. The problem-solving process must be clearly understood so that all participants can use the tools effectively. Goal setting, project selection techniques, and group dynamics are most important to members. Facilitator training should encompass the skills to administrate the activity and train leaders as well as learning the art of facilitating groups.

Teamwork is Encouraged

Many benefits result from training in the philosophy of team building. Management should encourage teamwork by assisting the communications between the circle and other non-members, other departments and other shifts. The philosophy of win-win will provide the guidance to strive for the best results. If teamwork is truly encouraged, the group will have the ability to accomplish so much more than if they are operating autonomously within the organization.

Recognition is Provided

The management presentation is a great form of recognition. Promoting involvement through organizational publicity is another great form of recognition. Certificates, pins, hats, jackets, notebooks and pens are all excellent ways to show appreciation for involvement. When you plan for gifts of recognition, make sure you know what is meaningful to the person receiving it.

Throughout my experience with hundreds of organizations, there are two forms of recognition that stand out. Sending members, leaders and facilitators to conferences is an outstanding form of recognition. An annual celebration, such as a dinner or luncheon with management in attendance, is considered by many quality circle participants to be very special.

Members Tackle Problems Within Their Own Area Of Expertise

Certainly as groups mature they will tackle problems that are broader in scope. Also, groups may solve problems with other groups. In the beginning, groups will experience greater success if they solve problems within their area. If the group relates that they have exhausted all problems, suggest that they ask their "customer" for additional problems. They will definitely supply the group with new problems!

Circles Complete All Steps of the Circle Process

Certainly the groups will resolve many minor problems from their brainstorming list without having to use the entire process. However, it is definitely common to see individuals focus on the perceived "best solution" well before there is adequate evidence to support it. It also helps the group that has a tendency to solve the "we need a new _____" type of problem by guiding them back to the appropriate stage in the process. If management makes the commitment to members to seriously consider their proposals, groups also need to seriously analyze and document their evidence.

CONCLUSION

Quality circles are undergoing transition and change in the United States today. We are seeing much more involvement from management through administration and team participation. Good basic skill knowledge in quality circles will enhance any form of employee participation through problem solving. For those organizations moving toward Total Quality Improvement, there will continue to be four basic absolutes:

Commitment to quality improvement
Involvement
Training
Recognition

The eleven keys to success will remain relevant as we move toward 100 percent involvement. As we prepare for the 21st century, there is no question that those organizations with a solid foundation in problem solving and team building will lead the United States in our challenge to compete in the world marketplace.

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BIOGRAPHICAL INFORMATION

Betsy Caughron, Assistant Vice President at Quality Circle Institute, is a graduate of The University of Iowa, B.B.A. Before joining QCI, she worked in education, government, journalism and large industry. Since her tenure with QCI, she has worked personally with hundreds of organizations with their employee involvement and quality improvement activities. She is also actively involved in speaking on the subject of quality improvement.

Pitfalls For the Unwary Quality Circle Facilitator

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This paper deals with five dysfunctional situations that can occur in a circle, some with life-threatening potential for the group. The writer will provide examples encountered during five years as a Facilitator in two organizations. Those with short exposure to quality circles especially may profit from insights gained through hard experience. Symptoms of each dysfunctional situation and corrective actions that can be taken will be presented.

After five years of service as a quality circle Facilitator, I have come to realize that most circles are vulnerable to a wide variety of problem situations--some of which can prove fatal. This is true of well established circles, as well as newly-formed groups.

The landscape of employee involvement in most organizations is still largely unexplored territory. There are all kinds of traps a circle can fall into if constant vigilance is not maintained. A Facilitator may not be able to do much about certain of these hazards, such as a major reorganization or layoff. However, this paper will address adverse situations that an effective Facilitator can help a circle avoid or correct.

PITFALL#1: LACK OF SUPERVISORY OR MID-MANAGEMENT SUPPORT

Judging by the literature, this appears to be the most frequent threat to circle success. It is easy to detect lack of supervisory and management support, although it varies in intensity from token support for circles to thinly disguised hostility.

Some of the common symptoms of lack of support are badmouthing circle efforts, negative body language when circle matters are discussed or when members leave to attend circle meetings, scheduling activities that conflict with circle meetings, bumping the circle from its meeting room, pre-empting circle project recommendations, withholding vital information, lack of visits to circle meetings, footdragging on Circle recommendations, and resistance to reasonable requests for assistance.

How can a Facilitator deal with lack of management support? A good place to start is with an understanding of possible reasons why supervisors and managers are non-supportive.

Perhaps the most common reason is the belief that circles deal with problems that are low on management's list of priorities, while expending large amounts of work time. Skeptical managers frequently say they could have solved the problem tackled by the circle in a fraction of the time. Some insecure supervisors and managers feel very threatened by quality circles. In their eyes, a circle can be too successful. They are afraid their superior may think that they were remiss in not solving the problem that the Circle addressed.

A third reason for lack of support may be a strongly ingrained management style of authoritarian decision making. There are supervisors and managers who have practiced and been exposed to Theory X management for so long, that they view employee involvement as an unacceptable infringement on their prerogatives.

A Facilitator's response to lack of management support should be geared to the specific reasons for it. If a manager strongly opposes quality circles because of hostility to employee involvement, a Facilitator would do well not to attempt to form circles in his/her area.

In other types of situations, the best way to build management support is to meaningfully involve supervisors and managers in the QC process. Thus, the initial leader of a circle should be the members' immediate supervisor. Facilitators and Leaders can request managers to inform their circles of annual and long term objectives for their organizational area. Managers should be invited to suggest priority problems/projects for a circle to undertake, without compromising the circle's right to make the choice.

Managers should be asked to share data relating to a circle's project and to keep the circle fully informed on relevant developments. Managers can be kept continuously aware of project progress and circle health by invitations to meetings, circle minutes, and periodic one-on-one meetings. Leaders should offer to report on circle activities at staff meetings.

An excellent way to involve managers is to encourage them to participate in management/supervisory circles and task teams. A task team is a group that is charged with solving a single, pre-selected problem and then disbanding. It is a task force that utilizes QC techniques.

To win and keep a manager's support, Circles must demonstrate respect for his/her needs and sensibilities. Facilitators should never allow Circle activities to negatively impact production deadlines. The Circle must be ready and willing to reschedule meetings when such action is legitimately needed. The allowed time for meetings and other circle activities should not be exceeded without prior approval. The assistance of Managers deserves generous appreciation and recognition in QC publicity, award ceremonies, and at management presentations. The impression must never be given at management presentations that supervisors and managers are in any way responsible for creating the problem being addressed, or for allowing it to persist.

PITFALL #2: POOR SELECTION OF PROBLEMS BY THE CIRCLE

The selection of the problem may well be the most critical step in the QC problem solving cycle. A circle's selection can be flawed for several reasons. It is not unusual for new groups to attempt to solve problems that are much too complex for a first project.

An example is a circle composed mostly of engineering technicians in a county public works department. This group believed that the local electric company was grossly overcharging the department annually for supplying power for the thousands of street lights owned by the county government. After grappling with this goliath problem for an extended period, the circle became immobilized by the vast geographical, political, and financial complexities inherent in a project of this scope. It finally disbanded without completing the project.

At the other end of the spectrum, a circle of procurement professionals chose for its initial project--lack of needed office supplies for its own unit. After a short time, a sizeable number of circle members dropped out of the group. They felt that the circle's project was too trivial to warrant the time away from their heavily laden desks.

A third type of poor problem selection is one which requires another organizational unit to mend its ways. An example is a circle of accountants and accounting technicians who were considering a project that would involve correcting the performance of data processing personnel located in a different Division. Had they proceeded, they would have found themselves in a functional area in which they lacked technical expertise. Further, they would have been dependent for their data needs on people who were defensive about the project.

Another category of poorly selected projects is one involving a work operation that is being phased out, is under revision, or is scheduled for revision. By the time the circle will be ready to present its recommendations, the problem may have vanished or the circumstances surrounding the problem may be entirely different. A sad illustration is a circle in a supply unit that spent a year analyzing the type of trucks used by its drivers to deliver office supplies and furniture. The group conducted a very effective management presentation. Unfortunately, the circle was not aware that the entire delivery operation shortly was to be contracted out.

The ideal solution to poor problem selection is "prevention." There are four ways a Facilitator can help a circle to avoid the selection of an inappropriate problem. The first is to hammer home the importance of proper problem selection during Circle Leader training, and to stress the use of selection criteria. A second is for the Facilitator to share his or her concern at the Circle meeting, if it appears the group is on the verge of making a poor choice of project. A third approach is to urge the Circle to check if there is consensus in the group on the choice of project, if the Facilitator has doubts. The simplest way to test for a consensus is for the Leader to ask each member in turn to express their feelings about a proposed project.

A final and very effective approach is to find a way for management to influence a circle's choice of project. I recommend that management serve as one source of input in the earlier step of problem identification. However, it is critical that it be clear at all times that the circle will make the actual selection of the project.

Prevention of poor problem selection is the ideal. But what can be done if after investing considerable time, a circle questions the suitability of its project? The proper corrective action will depend on the reason for project unsuitability. The difficulties may be due to having selected a problem that overflows the circle's work boundaries. If so, the antidote can be to invite the outside unit(s) to send representatives to join the circle for the life of the current project. Sometimes, redefinition of the circle's project may be what is needed.

However, if after careful analysis the circle concludes the current project represents a hopeless quest, the best course is to scrap it as soon as possible and get started on a new project that is "loaded for success." In the long run, the circle will be way ahead by making a fresh start.

PITFALL #3: INAPPROPRIATE USE OF QUALITY CIRCLE TECHNIQUES

One of the strengths of quality circles is that QC members are trained to use systematic problem solving techniques such as brainstorming and cause and effect analysis. However, if these tools are overused or misapplied, they can do more harm than good.

The experience of "The Force" quality circle illustrates the results of too much stress on techniques. The members of this circle had successfully conducted their first management presentation, and enthusiasm was high. Their new Leader was taking them through the Priority Work Sheet to select a second project. This is a technique to assist a circle in problem selection, through the use of criteria and a 1-5 point scale. The circle spent three meetings transferring points from individual worksheets to a master sheet, totalling points, and discussing variations in point assignments by different members of the circle. Shortly thereafter a number of members dropped out due to frustration over the slow progress.

QC techniques also can be underutilized. An example come to mind, the Invincibles circle. Although the Leader of this group was trained in QC techniques, his personality was such that he liked free and easy meetings. It was not unusual for him to conduct a meeting without an agenda. He used QC techniques mainly when pressed by the Facilitator. This Leader was very personable and his circle endured for a long time. However, it is not possible to identify any specific accomplishments for the group.

QC techniques should be used with balance and flexibility. When employed properly, techniques will serve the members of the circle. However, if circle members are constantly corrected for applying the techniques with imprecision, and if they feel personally criticized, the Circle is headed for deep trouble.

A Facilitator and Leader can identify overuse of QC techniques through member complaints and non-verbal behavior during meetings, and in brief post-meeting critiques. As needed, a Facilitator can provide feedback to Leaders in coaching sessions outside the meetings.

The obvious solution if a Leader or circle is totally confused about when or how to use a QC technique is refresher training.

PITFALL #4: EXCESSIVE INTERVENTIONS DURING CIRCLE MEETINGS

When I was appointed as Facilitator in my current organization, the QC Program was in the final months of its pilot period. One of the evaluation criteria for the pilot was whether each of the twelve circles had completed at least one project. At the time of my arrival, only one circle had conducted a management presentation.

It seemed to me that the pilot circles were in need of greater guidance than they had been receiving. My judgment no doubt was influenced by the fact that my continued employment depended on a successful pilot project. In any event, I felt compelled to vigorously push for progress at circle meetings. Accordingly, I intervened repeatedly at meetings with instructions and suggestions. Although all twelve circles met the deadline for completing their first project and the pilot was evaluated as a success, my relationship with some of the Leaders and Circles needed repair work afterward.

Today, with the pilot project almost three years behind me, I intervene only rarely at Circle meetings. I influence what takes place at meetings in private coaching sessions with the Circle Leader. If needed, I will help a Leader plan the agenda for the next meeting.

During the pilot, my old approach of frequent interventions during meetings made Leaders sometimes feel that they were being criticized in front of the members. Today, Leaders are entirely more receptive to my suggestions, when they occur outside Circle meetings.

PITFALL #5: BORING MEETINGS

At one period in its history, meetings of one of the circles I facilitate were painfully boring and tedious to sit through. The Leader did almost all the talking. Members slouched in their chairs, and some had trouble staying awake. Absenteeism was very high.

A number of things gradually occurred in this circle to change the situation 180 degrees. Meetings became lively, everyone participated, attendance was very high, and new people joined the Circle. What led to the turnabout?

My explanation is that the Circle redefined its project from something vague and impersonal to something specific, relevant, and challenging to its members. The original focus of their project was poor communication within their Branch. The group's problem statement included, almost as an afterthought, ineffective personal interactions among Branch personnel.

The breakthrough in this circle occurred when the afterthought replaced "poor communication" as the project focus. The redefined project was to produce a video tape containing a series of brief skits. Each skit dramatized the incorrect and correct way for Branch co-workers and supervisors to handle eleven different types of interaction situations. Circle participants became turned on for two reasons. First, the skits had a lot of personal meaning for each of them. Here was a relatively safe mechanism for getting a delicate message across to co-workers and supervisors. Second, it was great fun to create the video script and to see themselves on the TV screen.

This last example illustrates one cause for boring meetings--a project with low interest for circle members. Other reasons can be: 1) the project has taken so long that members have given it up as hopeless, 2) meetings are spent in endless discussion and little seems to get accomplished, 3) the Leader and/or a few outspoken persons dominate meetings, 4) some members don't understand the work operations being addressed by the circle, 5) meetings are too serious, and 6) the group wastes a lot of time ensnared in QC techniques.

If a Facilitator is not certain as to why members of a given circle seem bored, he/she can suggest to the Leader that one session be completely devoted to discussing participants' reactions to their meetings. One way to get such a discussion underway is for each member to express their satisfaction/dissatisfaction by writing a number from 1 (low) to 7 (high) on a 3x5 slip of paper, compiling the results, and discussing them.

Once the reasons for boring meetings are identified, the needed corrective action will be obvious most of the time. The solutions may include one or more of the following:

- redefine the problem
- select a different problem
- coach the Leader
- change the Leader
- provide an orientation for members who don't understand the work operation being studied
- use an action register to encourage completion of assignments
- make meetings more enjoyable through humor, guests, games, sharing of meeting tasks, etc.

- preparation of a project milestone chart
- use of an action-oriented agenda
- rescheduling of meetings instead of cancelling them
- involve people in the project who possess missing knowledge and expertise
- hold more frequent, end-of-meeting critiques

CONCLUSION

The purpose of this paper has been to alert Facilitators, especially those who are new, to five common pitfalls to which circles are vulnerable. Facilitators should attempt to prevent dysfunctional situations from occurring, to the maximum possible extent. If a circle starts to show symptoms of ill health, a proactive Facilitator will detect the situation at an early stage, determine causes, and promptly take appropriate corrective measures.

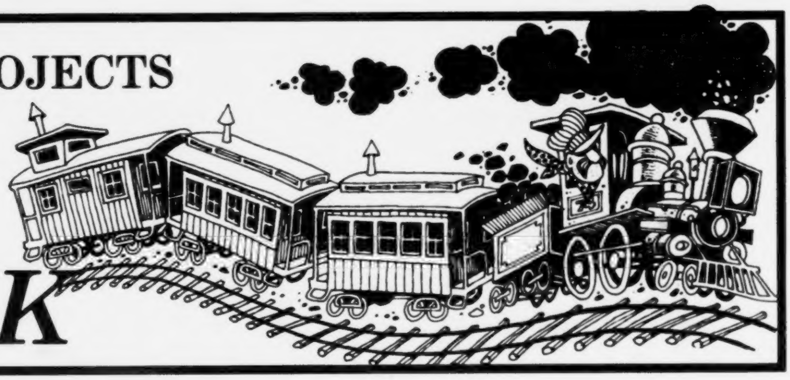
BIOGRAPHICAL INFORMATION

Jerry Feldman has been Facilitator for the Quality Circle Program of the Financial Management Service, U. S. Department of the Treasury since February 1984.

Prior to that time he served as Chief, Organization Development and Training for the Montgomery County Government in Rockville, Maryland. One of his accomplishments there was to implement Quality Circles in the County Department of Transportation.

Dr. Feldman has been an adjunct faculty member of the George Washington University, Montgomery College, and Prince George's Community College. He has also served as a contract instructor for a number of organizations. He holds an Ed.D. in Human Resources Development from the George Washington University, and is a member of the Potomac Chapter of IAQC.

KEEPING PROJECTS ON TRACK



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Occasionally a Quality Circle will stray from the proven problem solving process and conduct an unorganized and unproductive meeting. Outlined below are twelve ideas which aid in producing a productive Quality Circle meeting and thus keeping the project on track.

These ideas are:

(1) Prepare An Agenda

(2) Problems Versus Wants

(3) Establish Goal and Objectives

(4) Chart It

(5) Elect An Aggravator

(6) Remember The Wendy Theory

(7) Be Quick

(8) Don't Reverse the Funnel

(9) Continuation And Advanced Training

(10) The One Hour Meeting

(11) I. W. Work And N. W. They

(12) It's Your Fault

Prepare An Agenda

A Prepared agenda is a must for productive circle meetings. A good way to handle the agenda is to make it a responsibility of one of the circle members. A volunteer, of course. Usually, the last 5 minutes of a circle meeting can be devoted to developing next week's agenda. Have it typed and circulted to all the circle members by the "aggravator" before the next meeting. Obviously, it can be circulated in a handwritten form but be sure the writing is legible.

Everyone now knows what is to be done prior to the meeting. During the meeting and by whom. No, they don't always do it, but at least one alibi has been eliminated.

Problems Versus Wants

A brainstormed list of problems will invariably contain a certain number of wants. An exaggerated example of this could be described as follows: lack of adequate Cadillac transportation. Here you can visualize the "problem" as a lack of adequate transportation while the "want" takes on the label of a Cadillac.

Wants or cosmetic problems as they are sometimes referred to, are not altogether bad. Moving a water-cooler or improving the quality of the toilet tissue are fair game for circles. They serve a useful purpose by demonstrating that a circle can get things changed.

On the other hand, wanting to put a window in a wall just for the view or wanting to convert a one way street to a dual lane becomes just that, a want.

O.K. You're right. Exaggeration is encouraged and it does serve the useful purpose of getting everyone involved in brainstorming. And we are not discouraging it.

But, the point we want to make is this: get the circle to separate wants from problems. A list of each, if you will. Next invite your first level of supervision in to look over your want list and see if there are any items which he or she can solve. Maybe someone further up in management might be required to resolve the issue or explain why such an item is unrealistic.

Now the circle has accomplished three things. First, it has had immediate success in solving some problems. Yes, they should take credit for it even though a formal management presentation was not made. Secondly, they have gotten management involved in a positive way by inviting them to share the responsibility of solving circle problems. Thirdly, you are now left with a clean list of work related problems which the circle members have the expertise to solve.

Problems Versus Wants Cont'd

Again, resolving the wants of a circle should not be ignored. The trick is to keep wants separated from the real problems. Only when circles are heavily involved with real work related problems are they truly on track. More importantly, they know it too.

Establish Goals And Objectives

Once a problem has been selected, then you get your circles to establish specific goals/objectives with target dates for completion. An example might be as follows:

(1) Jan. 1st through Jan. 16th
Brainstorming/Project Selection

(2) Jan. 16th through Feb. 23rd
Data Collection and Display

(3) Feb. 23rd through Mar. 15th
Pareto: Decision Analysis

(4) Mar. 15th through Apr. 1st
Cause and Effect: Problem Analysis

(5) Apr. 1st through Apr. 15th
Verification and Solution

(6) May 1st
Management Presentation

What the circle has now done is commit themselves to a specific time table and putting it in writing has made it all the more binding. This usually prevents procrastination and eliminates the protracted project. Procrastination and the long drawn out project are very destructive to the circle process and circle results. It is amazing how hard a circle will work to meet a commitment made in writing especially when that commitment is a part of the minutes circulated to top management.

O.K. You're right. So all of the dates can't be met. So then what do you do? You can adjust your calendar accordingly. suppose you are meeting your target dates ahead of schedule, then what? Adjust your time frames downward. Again, what you are seeking to achieve is momentum which can be measured. Otherwise, there are no milestones by which the circles can measure their progress. No progress, no results.

This is an extremely effective technique for keeping circles on track.

Remember The "Wendy" Theory

A girl friend of one of my co-workers once asked him to help her move from her apartment to a new house she had bought. He agreed to rent a truck and help her when she called back.

Three weeks later when she hadn't called, he called her and asked what was the problem. Her reply went like this. I am using a diagram or floor plan of my new house to mentally place each piece of my furniture. I know that once in place that is where it will probably stay. So I want it to be right from day one. Smart lady.

So it is with circles. If circles start out meeting on time, completing their assignments and staying on track, then six months down the road they will probably stilll be doing that. On the other hand, if they start by canceling meetings, not attending meetings or not completing assignments, then six months down the road they will still be doing the same thing.

If you want a circle to stay on track and wind up right then have them start out on track by beginning right. Remember Wendy.

Elect An "Aggravator"

One of the keys to circle enthusiasm and success is to keep everyone involved. You usually elect a circle leader, assistant leader and secretary. Why not elect someone to make sure agendas are made and circulated to all members. Someone who follows up on assignments and keeps everyone informed of any changes in meeting times and places. The aggravator will even call members at home to let everyone know their efforts are crucial to the circle and are to be completed.

Caution! An aggravator is only effective when his/her actions are done in fun. Everyone should agree in the beginning as to what the aggravator will be doing and how he/she will be doing it. The wrong person with the wrong attitude could create a lot of disharmony and ill feeling.

On the other hand, a good aggravator can be the spark plug who keeps your circle on track.

Chart it

Use flow charts, milestone charts or charts of your own creationto keep up with the group's progress. You can post them in your meeting room and by all means be sure to include them in your minutes. Update as your project unfold.

Here, the key to the effectiveness of this technique is to try to set realistic goals and objectives tied to realistic target dates. If this is done by consensus and you remember the "Wendy" theory, then any project should stay on track and be concluded in a timely fashion.

Be Quick

Work through the steps in the process as quickly as possible. By setting goals and objectives and tying them to target dates for completion, you can usually complete a project every 3 to 4 months.

The long, drawn out project primarily does two things. First, it kills enthusiasm. Secondly, it allows a circle to expand its focus on what started out as a well defined and narrow problem. Both of these situations are deadly to circles, but by being quick, they can be avoided or at least minimized.

This situation is where an "aggravator" is most effective. It is through his/her constant encouragement and follow up of assignments that target dates can be met.

Couple this with an agenda, stated goals and objectives and you should keep the circle on track.

Don't Reverse The Funnel

This simply means all of your brain storming, data collection and problem analysis should be broad in the beginning. An analogy for this would be shoot your target first with a shotgun.

When you approach your final solution, then your focus should be narrow and very definitive. An anology for this would be shoot your target last with a rifle.

Circles seem to reverse the process, or as we call it

Don't Reverse The Funnel Cont'd

reversing the funnel by starting out small and then enlarging the problem as the final solution is approached.

This leads to confusion, delay and the belief that the process doesn't work. The process does work - it just falls victim to poor training and leadership. Again, this is a situation where an aggravator, through proper coaching, can help prevent and thereby keep the project on track.

Continuation and Advance Training

Even when you have completed your member training and you are midway in a project, you may find that a quick review of the process will be a needed boost. Training and retraining should always be a part of the ongoing circle process.

A good way to handle this is to get one of the circle members to be responsible for conducting training on a segment in which the circle may be weak. This builds commitment and involvement and you have another person to help keep the project on track.

Advanced training usually takes place in the area of Group Dynamics. Here you get someone from your training department or should your budget permit, an outsider to do it for you. an outsider always brings a fresh personality and usually a few idea or two.

Or, you can do it yourself. The problem with this is you may wind up repeating yourself and thereby bore yourself and the circle. If you can do it yourself, just be conscious of the need to keep everything on track.

The One Hour Meeting

There is a mistaken belief among circles that they have to meet one full hour each week. This is not true since on some occasions, there is not enough productive work to consume the full sixty minutes.

If you find yourself in this situation, then postpone the meeting or end the meeting when productivity stops and shooting the bull begins. Circle meetings which degenerate into bull sessions are an infectious and often fatal disease. The circle members begin to view the circle meetings as a waste of time in which nothing is ever accomplished. so do outsiders.

Another mistaken belief among circles is that the one hour must be used exclusivery to conduct formal meetings. It doesn't. You can use the hour to collect data, construct charts, graphs, and other visual aids to be used in management presentations. You can do this in a group setting or individually back at each person's work station. Caution! When you elect to use the hour on an individual basis, be sure to do so with management approval and only if the individual has something constructive to do... and does it.

I.W. Work and N.W. They

Two of the most powerful individuals in any company can't be found on any organizational chart or in any office. Yet, they exert tremendous influence on the momentum and direction of a circle. You need to know these guys personally and make your circles aware of them in the beginning. they are: It Won't Work and No Way they.

Regardless of what you are working on, somewhere along the way, someone will vow that it won't work here or there's no way they are going to let you do it. If you aren't careful to take immediate action, a single comment can turn into a chorus. What you wind up with is a sidetracked project and a circle demoralized by negative thinking.

Again, you should acknowledge the existence of I.W. Work and N.W. They in the beginning. Thereafter, you can ask the aggravator to make sure these two disruptive individuals are never allowed to attend your meetings. And if they do, make sure they leave as promptly as they arrive. Courteously, of course.

It's Your Fault

Part of circle member training should be a constant instilling of individual responsibility for the collective success of the circle. It is each member's ultimate responsibility to see that schedules are met and work assignments completed.

Too often, when enthusiasm begins to wane and projects get long and drawn out, the members begin to gripe and complain, some become delinquent in attendance and some drop out completely. Obviously, when this happens no project is on track.

To counteract this, you should ask what the complaining member has done to correct the existing situation. If he or she says "nothing" then ask what they think should be done. If their response is consistent with good group dynamics, then ask them to do it and report the results to you. Should their answer not be consistent with good group dynamics, then offer your own suggestion along with a lot of encouragement.

Remember, you can't do it for them. It is only when they accept individual responsibility that a project and circle can be kept on track.

Gene Godwin is the Quality Circle Coordinator for Carolina Telephone.

Gene is a 26 year phone company veteran. His experience spans a broad spectrum of line and staff responsibilities in the commercial, marketing, corporate communications and personnel departments. Gene was the company's second full time facilitator and has been involved with quality circles for the past three years.

He currently serves as the educational vice-president of the Eastern North Carolina Chapter of the IAQC.

Grif Bond is a Quality Circle Facilitator for Carolina Telephone.

Grif Bond has worked with Carolina Telephone since 1979 after graduation from the University of North Carolina with a B. S. degree in business administration. Prior to appointment as a full time facilitator in November 1984, his responsibilities included serving as a staff assistant and a business office supervisor in the company's commercial department. He is an active officer in a large volunteer fire department and rescue squad and also serves as a fire/rescue service instructor with the local community college.

Currently, he serves as the president of the Eastern North Carolina Chapter of the IAQC.

Talmade Tingle is a Quality Circle Facilitator for Caroline Telephone.

Talmade joined Carolina Telephone in 1956. His experience in the telephone industry includes inside and outside plant. He was appointed Repair Center Foreman in 1976, a Quality Circle Leader in 1983 and a full-time facilitator in Septemeber of 1985.

He serves as President of the Coastal Carolina Chapter of the IAQC.

Corporate Information

Carolina Telephone is the second largest operating telephone company in the United Telephone System. The company provides total telecommunication services to most of the fifty counties within the eastern part of North Carolina. some 634,000 customers are served by approximately 4,000 employees.

The company piloted six circles in February 1982 with one full time facilitator. The initial success of the pilot group has led to an expansion to thirty-nine circles, two full time facilitators and one full time coordinator/Facilitator.

With the advent of deregulation coupled with the market forces exerted by technological innovation, top management envisioned employee involvement (Quality Circles) as a way to facilitate change in attitudes and thinking. In this way, the company will develop a competitive edge for corporate success in the years ahead.

Recognizing that the Quality Circle concept was indeed effectively changing the corporate mindset, top management recently poised the company for total employee involvement.

PROBLEM DEFINITION/SELECTION

Presented by Carl Hicks;
Boeing Aerospace Company, Manufacturing Division,
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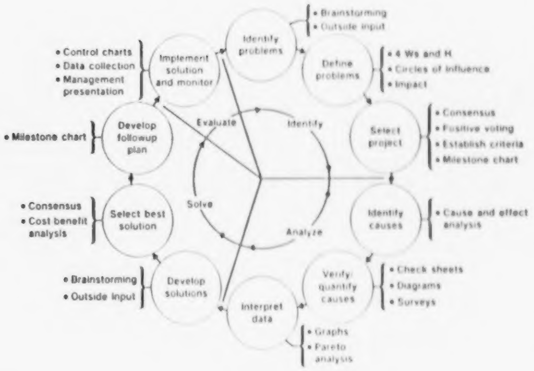
Unless a problem is clearly defined, you are not going to find a solution without going through a lot of unnecessary effort. Perhaps this is an obvious point, yet research on problem solving suggests that this is something most of us do inadequately-individually and in groups.

This session will demonstrate methods of developing a clear problem statement, and techniques that have worked effectively for problem selection.

Problem-Solving Process


• Brainstorming
• Outside input
Identify problems
• Control charts
• Data collection
• Management presentation
Implement solution and monitor
Define problems
• 4 Ws and H
• Circles of influence
• Impact
• Milestone chart
Develop followup plan
Evaluate
Identify
Select project
• Consensus
• Positive voting
• Establish criteria
• Milestone chart
• Consensus
• Cost benefit analysis
Select best solution
Solve
Analyze
Identify causes
• Cause and effect analysis
• Brainstorming
• Outside input
Develop solutions
Interpret data
Verify/ quantify causes
• Check sheets
• Diagrams
• Surveys
• Graphs
• Pareto analysis

To develop a good problem definition, teams have to sort out confusing situations and determine what are symptoms, problems, and solutions. A clearly stated problem enables groups to identify a wide range of causes and several potential solutions. A clearly defined problem is half-solved, and a poorly defined problem requires twice the effort to solve.

The problem needs to be defined in ways that do not restrict efforts toward finding a solution. We need to remember that we want to obtain the most effective solution to the problem. Our efforts can be hindered if the problem is defined in general terms, or if it is stated so that it includes a specific solution. A good problem definition suggests things that can be done to find more than one solution.

A typical brainstorming list may look like this:

- Lack of communication
- Poor morale
- Overtime
- Too much paperwork
- Lack of time
- Lack of resources
- Training

Which are problems? Could some be solutions, or even symptoms, to the problem? "Too much paperwork" is a problem and is stated as a problem. "Overtime" and "Training" may be problems, but are not stated as problems. The statement doesn't let us know if it is too much, too little, uneven distribution of, or what exactly makes them problems. "Poor morale" is a symptom, but more importantly, it is subjective. Statements about "attitudes," "morale," "motivation" and "interest" are subjective judgements that speculate about another's motives. These types of statements put others on the defensive and get in the way of clear problem definition.

A "lack of" statement is almost always a solution being stated as a problem. You need only to acquire what you lack to solve the problem. This type of statement may cause the team to take short-cuts, missing more viable solutions to the problem. "Lack of" also makes data collection impossible. You can't collect data on something you don't have.

When teams perceive a solution as the problem, they risk closing their minds to other-often better-solutions. To help avoid this trap the team can ask itself the 4 W's and 1 H. These will help develop an objective statement of the problem. The questions need to be used selectively-some questions are not applicable to some problems. We have found that the 4 W's and H are most effective after the problem list has been brainstormed, and then used in conjunction with problem description and selection. It makes the selection process more effective, and provides members with a fairly clear picture of what is involved with each problem.

When the review of the problem list brainstormed is discussed, generally the person who identified the problem provides most of the 4 W's and H (Who, What, Where, When, and How-Why is purposely left out at this point). However, other members should add any information they have that pertains to the problem. The 4 W's and H provide: Who-is generating the problem? is affected by the problem? (People? areas? organizations?). What-is involved? (Procedures? equipment? service? product? supplies?). Where-is it happening? When-is it happening? (What time of day? how often? during what part of the process?). How-serious is it? (How widespread? how costly? how painful?).

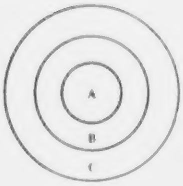
PROBLEM: Inadequate lighting in the machine shop

	Known Information		Unknown
	Is	Is Not	
What	Inadequate lighting		
Who	Machinists Mechanics		
Where	Lathes, mills	Grinding Wheel	Drill press
When	Day and Swing Shift		
How Much	For close tolerance work	For rough work	

Once these questions have been answered, a clear problem definition is easily developed because it will meets these four needed criteria-it will identify an expected level of performance or a norm that is not being achieved. The situations can be defined as irregular, inefficient, outdated, unreliable, inconsistent, excessive, and so forth. Another criteria is that it be specific rather than general-the 4 W's and H are easily applied. The third criteria for clear problem definition is that more than one solution is implied in the statement. And finally, the acid test of a good problem statement-it must imply the question "Why?". If it doesn't, the definition needs work.

After the problem list has been scoped and projects defined, the project prioritization phase begins. An effective method of prioritization is using "Circles of Influence" to classify the problem as a Type A problem-it is entirely within the circle's control; a Type B problem-it will need some outside help, but the group can reach the decision maker; or a Type C-the team has no authority to implement a solution, and may or may not be able to reach the decision maker. After applying the "Circles of Influence," they are ranked for impact-1 for little or no impact; 2 for some impact; and 3 for considerable impact. Both these rankings are done quickly and relatively easily because of the information generated by the 4 W's and H.

Circles of Influence



- Type A problem circle has complete control of
  - Can identify and define problem
  - Has control of data collection, including specialists' inputs
  - Has expertise to analyze problem and find solutions
  - Has authority to implement solutions
- Type B problem circle has limited control of
  - Can identify and define problem
  - Has control of data collection including specialists' inputs
  - May lack expertise to analyze problem or find solutions
  - May lack authority to implement solutions
  - Can reach and influence ultimate decision maker
- Type C problem circle has little or no control of
  - Can identify and define problem
  - May be able to collect data
  - Lacks expertise to analyze problem and find solutions
  - Lacks authority to implement solution
  - Cannot reach or influence ultimate decision maker

Priority Assessment

Ranking for Impact and Control

Impact	Circles of influence
1 Little or no impact	A Entirely within circle control
2 Some impact	B Requires cooperation of or concurrence with outside organization
3 Considerable impact	C Little likelihood of circle influencing or changing

Priority	Ranking	
	Impact	Control
1	3	A
2	3	B
3	2	A
4	2	B

After ranking the problems for impact and control, project selection is completed through a modified version of the Nominal Group Technique we call "Sticker Elimination." Each member is given (i.e.) 5 colored stickers, and they put them by the 5 problems that are most important to them. The problems that are unimportant to the group will fall out, and the problems with the greatest number of stickers are worked first. While this is not consensus, we have found it works well. We take the approach that they joined the circle to work problems; they had the opportunity to provide input; and we don't feel consensus is necessary for problem selection-we still stress it for solutions.

BIOGRAPHY

Carl Hicks is a Quality Improvement facilitator with the Boeing Aerospace Company-Manufacturing Division, near Seattle, Washington. In addition to facilitating quality circles, he designs quality improvement training, and is the author/editor of a monthly newsletter for the quality circles. He conducts leader training, advanced circle techniques, member training, and mid-level management seminars. He also instructs communication classes at one of the local colleges, and specializes in the areas of communication, participative management and training design.

He is a member of the Michigan Quality of Worklife Council, the Deming User Group, and the I.A.Q.C. He has been a presenter for the Greater Seattle chapter during their regional conference; a presenter at the annual spring I.A.Q.C conference; and one of the circles he facilitated was selected to give their management presentation at the annual I.A.Q.C. conference.

Carl has a BS in Social Psychology—emphasis on small group behavior; a BS in Human Services Administration—emphasis on Androgogy (adult learning); and a MBA with his research project on participative management.

Four Reasons for Rejecting a New Idea

- Assume it will never work
- You've never done it that way before
- Point out that you're doing fine without it
- Point out that this is not the time to be fooling around with new ideas

Structure Your Meeting For Success

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When Quality Circles or other problem solving groups are formed, group members receive training in the various tools of problem solving. However, little emphasis is put on having meetings that provide common focus and mutual understanding of tasks to be accomplished. Recognizing that need, this session was designed as a training module to provide Quality Circles and other groups with strategies for conducting effective meetings in an easy-to-use format.

In order to have an effective meeting, everyone involved in that meeting has to have a mutual understanding of the purpose and expected outcome or objectives of that meeting. When the group is without a common objective or mutual understanding, the meeting has high potential of being wasted time and effort. An effective and well-planned meeting agenda will help keep the group on track.

Meetings are an investment. The organization invests money and provides resources for meetings; members invest their time and energies. It is the responsibility of the meeting leader to see that these elements- time, money, and energy are efficiently expended.

Usually when investments are made there is a goal as the outcome of the investment. Such as when money is invested in stocks, mutual funds, savings accounts, etc., the goal or outcome is to have more money. The same should hold true for meetings. Meetings should be constructed so that the outcome is aligned with an overall goal and measureable progress is made.

As stated above, to have an effective meeting, the group has to have a goal. Having an overall goal gives the group something to strive for and a direction to channel the group's efforts. The goal can be long-range or short-range, but to have real meaning, the goal has to contain certain elements.

A. It must be achieveable. The goal has to be within the scope of the group to solve or recommend a reasonable solution. It is almost a natural tendency, especially for a newly formed group where enthusiasm and expectations are high, to choose a goal that is beyond the scope of the group to achieve. A group must determine if their desired goal can be met; if it can't be met, the group should revise their goal to reflect the group's capabilities.

B. The goal should be challenging. Taking on too easy of a task is a waste of the group's time; too difficult, and the group founders and loses interest. A challenging goal gives the group a sense of mission.

C. A goal should be measureable. To effectively change the way we do something, we have to be able to measure that change. Defects per hour, man-hours estimated vs. man-hours used, dollars saved, are just a few examples of measureability. One item to note is that you can't effectively measure morale. Increased morale is a by-product of the participative management process. If you can't measure it, you can't change it.

D. The goal must be limited. Setting a reasonable time limit to a goal adds to the challenge by acting as a catalyst to motivate the group.

E. A goal, when met, should be rewarding. It would be almost Utopian to think that management regularly rewards Quality Circles for their efforts, but isn't participating in Quality Circle activities "Above and beyond the call of duty"? If management doesn't have the savvy to reward the circle, the circle can always reward itself. Potlucks, luncheons, or social gatherings are just a few of the ways circles can reward themselves.

Management is one of the best sources a Quality Circle can turn to for goals to work on. It is a good idea to invite management to the circle meeting and ask them what the goals of the organization are. The circle can then choose a goal that is in line with management's goals. This helps foster and maintain much-needed management support for the Quality Circle process. Once the group has established a goal, the next step is to brainstorm a plan of action. These actions should then be written as performance objectives for subsequent meetings.

Having a well-defined goal and a plan of action are the foundations for effective meetings. Constructing an effective meeting agenda assures that the group has common focus and understanding of tasks to be accomplished during the meeting. There are several basic elements that are essential for setting up a good meeting agenda.

A. Write a performance objective or a purpose for the meeting on the agenda. A performance objective should answer "Who will do what by when and to what extent". There should already be a performance objective written on the plan of action that can be used in making up the agenda. An example of a performance objective would be "At the close of our meeting our group should have sufficient data to put into a chart or graph for our presentation". By analyzing this statement with the above definition one can see that the statement answers the "Who will do what and to what extent", plus it puts the objective into perspective with the overall outcome "for our presentation".

B. The agenda should act as a roadmap to steer the meeting. Careful consideration should be given to sequential make-up of the agenda so that it is not necessary to backtrack and possibly lose momentum.

C. Action items are the specific things that have to be done in the meeting to meet the objective(s) of the meeting. These should be carefully planned out (in sequence) before hand so that the meeting "workload" isn't too heavy. An agenda should be achieveable.

D. Discussion topics should be kept detailed and concise. Leaving a discussion open-ended without a decision or action to be taken at the outcome only promotes that your meeting will probably run over, or you will not meet your meeting objective. If possible, break the discussion down into an agenda of its own, with an action as the outcome of the discussion.

E. Insure a next step. A major part of the success of an effective group is in keeping momentum. When momentum is lost, the group founders and wastes valuable meeting time. If the group has a logical and well-planned action plan, they can use the action plan to draw their next step from.

F. Evaluate your own progress. Did you accomplish what you set out to do in your meeting? Did the group meet it's objective(s)? If necessary, dedicate the last part of the meeting to check and see if the group has met its objectives for that meeting, and where the group stands as far as progress toward its overall goal.

Meeting time should be managed as efficiently as work time. An effective agenda will act as your "time manager" and as a focal point and roadmap for your meeting, as well as providing a mutual sense of direction for all participants. It will also aid those persons that are reluctant to be in front of a group by helping to lead the meeting for them.

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BIOGRAPHICAL INFORMATION

Stan Hitchcock has been involved with the Quality Circle process at Mare Island Naval Shipyard since 1982. He is responsible for establishing, training, and facilitating Quality Circles in a wide variety of functions. He is Program Director of the "North of the Bay" Chapter, IAQC.

Facilitating Circle Success Through Networking

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Numerous steps have been taken by Human Resource personnel and Quality Circle members at Los Alamos National Laboratory to increase networking opportunities between themselves and other organizations. Many Circle successes can be attributed to factors such as Lab-wide Circle activities and meetings, Employee Involvement Team reports, a videotape library for reference, and communications from Sandia National Laboratory and Livermore National Laboratory, and other organizations. A detailed description of how to make networking more effective will be given. Conference participants will have the opportunity to take part in a networking activity.

Introduction

For an organization to be successful in its networking efforts, it would benefit from first involving a high degree of participative management which utilizes shared power and responsibility (Krause 1984). That is to say, the Laboratory would not be able to promote this type of networking without first promoting some degree of participative management. In addition, the organization should recognize the advantage of multi-group membership and thereby facilitate the development of interdependent groups. This implies that in a closed system, effective involvement of the employees may serve to facilitate the exchange of information vital to the optimal functioning of the organization. Therefore, employee involvement can be profitably encouraged. Such support would promote and fuel greater productive capacity and innovation within the organization.

There is a direct relationship between the exchange of information and an awareness of interdependence (Mulford 1984). Networking may eliminate significant differences in organizational and/or divisional properties. Through networking, employees realize their similarities and their ability to productively function with individuals in other, perhaps competitive, organizations and divisions. Management can also contribute to Circle success by involving themselves, formally or informally, with Circle members by offering their knowledge and skill in the area of Circle interest (Kanter 1983).

The Laboratory Environment

The Laboratory, founded in 1941, now has approximately 40 divisions and over 200 groups. Unlike many other organizations, the Laboratory maintains a functioning position somewhere between that of a university and an industry. Los Alamos has a large, multidisciplinary capacity and is responsible for such diverse activities as research and development in almost every scientific area from the life sciences to information systems.

Such diversity calls for an organization which will promote collaboration between the many divisions in order that the Laboratory may carry out its mission. The almost innumerable levels and cross sections of management require an extremely effective method of communication and collaboration in order to reach the common goal. The physical size of the Laboratory as well creates a problem which many other organizations do not face. Even divisions with relatively similar responsibilities are often separated by great distances making the exchange of information more difficult and time consuming.

The Quality Circles

The Laboratory became involved in Quality Circles about 1981. There are now approximately 11 functioning Quality Circles at Los Alamos National Laboratory. The Quality Circles represent many different groups and divisions. The divisions involved include: Computing & Communications; Health, Safety & Environment; Information Services; Dynamic Testing; Materials Management; Materials, Science & Technology; Design Engineering; Protocol; and Accelerator Technology.

In July, 1986, Employee Involvement Team interviews, conducted by the author, revealed positive growth for each functioning Quality Circle. Taking part in the interviewing process were Circle representatives from the following groups: HSE-9 (Quality Control), HSE-10 (Safety), IS-9 (Photography), IS-10 (Composing), IS-12 (Illustration/Design), MST-9 (Drafting), MST-10 (Non-Destructive Assay), MST-13 (Foundry Operations), AT-8 (Neutral Particle Beam Control Instrumentation), PR-2 (Food Services), and PR-3 (Protocol). The Quality Circle coordinator and a certified facilitator with the Laboratory were also interviewed.

Networking Methods

The Training Office at Los Alamos National Laboratory has extended its services to include a central information center for functioning Quality Circles at the Laboratory. The Training Office makes available a wide variety of resources beneficial to Circle members for developing their Circle process. The Training Specialists, Lois J. Thompson and Rod Brown, work extensively with team building, strategic planning, and Quality Circles. These services, made continually available, further promote employee involvement and information sharing. A formal Lab-wide course has been organized to teach facilitator and leader skills. This course has also been presented to specific groups at their request.

An activity conducted for several years by Lois Thompson, the Laboratory Quality Circle Coordinator, is the Noontime Meeting of Quality Circle members and management. This year the meeting took place on April 15, 1986 and served as a forum for the exchange of ideas and methods. Representatives from each Circle were present and were responsible for a report of their Circle's projects and progress. The meeting began with an explanation of the Quality Circle concept, followed by the Circle reports. The meeting ended with a panel discussion pertaining to Circle effectiveness and the efforts of the Laboratory. Participating were four panelists and a moderator who answered questions about Quality Circles, conveyed Circle experiences, and endorsed the Circle process. Comments indicated the meeting was so successful in enlightening employees about the concept of participative management and in producing an enthusiasm in those persons not yet involved, that it is hoped the meeting will continue to be an annual event.

The Human Resources Division of the Laboratory includes a Learning Resource Center (LRC), which is a part of the Training Office and serves as a library for Quality Circle information. The resources available include books, cassettetapes, and videotapes which can be loaned to those groups desiring to gain knowledge about the effective approaches toward the formation of a Quality Circle. The LRC offers commercial resources, while the Video Learning Center offers its services in audio-visual production. Feature- length training videotapes are made on location at the Laboratory involving the Quality Circles, Training Specialists, and managers.

At the 1984 National IAQC Conference in Cincinnati, Ohio the Quality Circle Coordinator from Los Alamos National Laboratory made contact with representatives from Lawrence Livermore National Laboratory and Sandia National Laboratory and experienced a beneficial exchange of information concerning the Quality Circle activities at their respective laboratories. This meeting resulted in phone conversations and videotaped presentations of vital Quality Circle information. For example, in 1985 employees of Lawrence Livermore National Laboratory and Sandia National Laboratory communicated with specific Circles at Los Alamos to share reports of their activities. The Lawrence Livermore representative noted that there were not many training materials available for industries which rely heavily upon critical and analytical thinking and subjective problem solving. However, they found an abundance of training materials targeted at industries involved in the production of commercial products. They modified available materials to fit their Research and Development environments. The Sandia National Laboratory report expressed the supportive involvement of their management, who funded their luncheon meetings. This informative exchange served the purpose of making each of the three participating laboratories aware of their ability to tailor the Quality Circle program to fit their specialized environment.

In July, 1986 an Employee Involvement Team Report was produced to make the exchange of information between the Quality Circles and the Laboratory population easier. Formal interviews with representatives from each Circle, as mentioned previously, were used to collect relevant data about Circle progress. Reviews of journal articles and a management response was included. The report provided useful information about the efforts of the Laboratory, and helped to promote the interests of the Circle members and the Training Office.

Success Through Networking

Many of the Quality Circles at the Laboratory have made notable progress due to their networking efforts. A number of the projects undertaken by the Circles required a significant amount of information sharing in order to research, develop, and implement their projects:

> IS-12 Quality Circle - Employees in this group are responsible for publication design and technical illustration, and established their Circle in April, 1985. The unique characteristic of this Circle is that the group leader and deputy group leader initially served as the Circle leader and facilitator respectively. Circle members agreed that including management in the Circle process would allow them greater access to information which would not ordinarily be readily accessible. The insight and knowledge of their management members facilitated Circle progress, promoted success, and made evident the strong presence of management support.
>
> MST-10 Quality Circle - When the MST-10 Circle reorganized in April, 1986, their primary project became the development of a method to improve the system for tracking the status of incoming items requiring assay. The Circle worked in conjunction with a Chemistry group (CHM-1), which had previously solved a similar tracking problem. The CHM-1 group evaluated the plans and the implementation. The MST-10 group experienced great success with their tracking solution.
>
> IS-9 Quality Circle - This Circle of photographers developed an in-house training program specifically for the members of their group who seek to broaden their knowledge and skill. When a computer science group expressed the desire to begin an in-house training program as well, Circle members from IS-9 served as consultants to the group.
>
> HSE-9 Quality Circle - Submitting a proposal to management for a new ventilation system for their facility involved a thorough job of data collection. The incredible amount of documentation required was not located within the HSE-9 facility, so a lengthy search ensued with the aid of other groups and individuals. The Circle commends two engineering groups, the HSE-5 (Industrial Hygiene) section, and the HSE Division Office for their contributions to the effort. Their involvement in the search required much time and energy. Without their contributions the HSE-9 Quality Circle would have been greatly hindered in its progress.
>
> Barbara Connellee is an IAQC certified Facilitator and has probably facilitated more Los Alamos Quality Circles since 1981 than anyone else at the Laboratory. Her facilitation of numerous Circles involves the transfer of vital information concerning procedure, management receptivity, and available monies, in addition to her theoretical knowledge of Quality Circles acquired through training and extensive experience. Her role as a mediator between the Circles, and between the Circles and management, has significantly facilitated the Circle process at the Laboratory.

Conclusion

The productivity and communication of the organization can be greatly improved by Quality Circles and Quality Circle members extending their involvement to include other Circles and other divisions within and without the organization. The successes of the Quality Circles at the Laboratory have been significantly enhanced by networking efforts. The services and knowledge of Circle members are made readily available to others so that the organization may jointly move toward the accomplishment of their goals. It is important that each individual within the organization, whether involved in the Circle process or not, maintains a non-possessive attitude toward his or her achievements which serve to positively influence the progress of the organization. The Laboratory at Los Alamos can claim innumerable victories using the networking approach. The networking efforts of the functioning Quality Circles meaningfully enhance the progress.

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Biographical Information

Stephanie D. McIver, an Industrial Psychology Summer Intern (1986), is currently a Senior Psychology student at Spelman College in Atlanta, Georgia. As an intern at Los Alamos National Laboratory in Los Alamos, New Mexico, she was introduced to the concept of Quality Circles and helped to develop the first Quality Circle Report. She was also instrumental in the initial steps taken to organize a local chapter of the IAQC. After graduation in May, 1987, Ms. McIver has plans to enter a doctoral program in the area of Clinical Psychology.

The First Meeting...More Than Fun and Games...Getting Groups Off On The Right Track

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The first meeting of any ongoing group, should have as its objectives, accomplishments that go far beyond socialization. After having worked with numerous formal groups, (QC) and informal groups (corrective actions teams, task forces, involvement teams, etc.), the author believes that groups should: recognize that they are unique entities, sponsored broadly by the organization and specifically by someone within the organization to create/change that which is valuable to the organization; understand that training in problem identification/solving techniques along with data collection/display techniques will be presented to assist in task accomplishment; understand that process support will be available in the form of a facilitator, whose function is designed to lead ultimately to group independence; clearly understand the limits of their responsibility; learn what Brainstorming is, and its appropriate use; begin to identify real world concerns, to avoid the feeling that the first meeting is only "touchy/feely stuff"; understand problem typing, and the channels available to deal with those identified that fall outside their purview; utilize Brainstorming to identify both inhibitors to their effectiveness and structures to minimize the inhibitor's effect; establish meeting times and locations.

The first meeting must be much more than getting together to select a team name; during this meeting, the groundwork for the ongoing interaction of the group, must be established.

Over the years, I have witnessed events taking place in thousands of meetings. I wish to focus on those events observed during first meetings of ongoing groups. I believe that this first meeting should have as its objective, accomplishments that go far beyond socialization.

The ritual of socialization changes little from group to group or organization to organization; the initial exchange of amenities, queries, and skepticism, is usually followed by behaviors varying only with the characters who play out the roles.

A partial list of these behaviors often include:

— a "direction" from one who is vocal, to get the group actively involved in the assigned task...usually the initial leader

— a withdrawal into silence, by those who may be projecting their basic personality, or who may be waiting for the game to be called before deciding on playing or sitting it out

— almost microscopic observation of the group to detect signals from protagonists, regarding direction to be taken, and from antagonists, defining where not to go

— neutrality and its range of response from sleep to ambivalence

At times the initial meeting is plagued with an uneasy tenseness as the players jockey for position, turf and role definition. During this stage of development, an invasion of "space" may be greeted with snapping; uninvited mistakes in the pronunciation of a name may draw a critical response moving the situation to a higher degree of anticipation. At other times this tenseness may be relieved by a humorous episode that, "Breaks the Ice."

After the initial meeting, I have observed that group members frequently return to their earlier resting place as if it were owned real estate. This territorial return rite supports previous behaviors that are further reinforced by ones neighbors...they know you and you know them. Any change in established behavior or the introduction of "new people on the block" may result in the group having to repeat the socialization ritual.

Just as the change in temperature triggers a caterpillar's metamorphosis, so to, the chilling reality of time constraints result in most groups beginning the transformation to a team. When the climate changes, proposed direction relative to task accomplishment and the supporting behavior are more readily accepted. The continuation of these altered behaviors are then supported by the team.

This change in behavior often contributes to sudden bursts of creative thinking; during which participants display amusement and amazement at their contribution. Assertive behavior, the recognition of ones own rights and responsibilities along with those of other team members, may then be displayed and is often described as "effective group dynamics."

I would propose that, as in our caterpillar analogy, the transition to butterfly is aided by the structure of the cocoon, so too a group transformation to an effective team is aided by structure. The agenda for the first meeting can set the climate and serve as the cocoon to avoid the happenstance approach to team development described, and to establish the groundwork for the interaction required for task accomplishment.

The agenda for the first meeting should be established to allow the group to understand that:

- it is a unique entity, sponsored broadly by the organization and specifically by someone within it to create/change that which is considered valuable
- it will identify both the inhibitors to effectiveness as a group and the structure to minimize the inhibitors' effects
- training in problem identification/solving techniques along with data collection/display techniques will be presented to assist in task accomplishment
- process support will be available in the form of a facilitator, whose function of coaching and process maintenance, are designed to lead to group independence
- the identity of real world problems, concerns, and fixes are the objectives not simply interaction
- problems are different, and that it is important to utilize the channels available to deal with those that fall outside the purview the group
- times and locations for future meetings must be established

An agenda for accomplishment of these objectives might resemble the following:

Time/Activity	Reason
0.00/"Brainpower" Video featuring J. Houseman	To set the stage for full group participation
0:12/Overview of Agenda	To establish a comparable level of understanding
0:20/Synergy Exercise ie: President's drill	To establish base for synergy discussion
0:30/Exercise Debrief "Why did you get more as a group?"	To introduce synergy, and the effect of participation
0:45/Explain Brainstorming, its groundrules and practice by identifying "Barriers to Team Effectiveness"	To teach Brainstorming and identify barriers to effectiveness
1:05/Break	
1:20/Use Brainstorming to identify "what we can do to avoid the barriers identified	To establish interactive structures
1:45/Review Brainstorming groundrules as an interactive structure	To establish Brainstorming groundrules as a "code of conduct"
2:00/Discuss group role: . reporting relationship . organizational position . limits of responsibility (problem typing) . Training to be delivered . Role of facilitator, leader, recorder, etc.	To establish group identity
2:15/Begin to Brainstorm a list of ideas or concerns around problems presented and then "type" it	To practice Brainstorming, touch base with the real world, and supply feedback on under standing
2:30/Discuss major meeting aids: . Agendas . Notes . Idea lists . Behavior agreements . Process checks . Critique	To establish fixers
2:45/Brainstorm a list of meeting rules/agreements for "our" group.	To establish ownership
3:00/Brainstorm and select group name.	To practice Brainstorming and utilize rules to establish consensus

3:15/Create agenda for next meeting with Review at top of list.	To establish a bridge

3:30/Close

Note that although this agenda is time-consuming, it may be easily segmented into a number of meetings. If this is required, the first meeting, must include Brainstorming to insure that the group recognizes the activity as more than simply academic. The time spent will be well worth it and will enhance the effectiveness development process.

This agenda, must not be viewed as a panacea, but rather, as a vehicle to identify those behaviors considered by the group to be acceptable/ non-acceptable and therefore worthy of reinforcement/restriction. Everyone in the group then has the ability to contribute to making the accomplishment of the task easier..a definition of facilitation.

By establishing the climate and identifying acceptable and non-acceptable behaviors we create our own "neighborhood watch" group. The return to original resting places, that will inevitably occur in subsequent meetings, and the association with "neighbors" who understand the "rules", reinforces continuing behavior that contributes to effectiveness.

BIOGRAPHICAL INFORMATION

Joseph R. Propersi is Corning Glass Works' (CGW), Manager of Manufacturing Education. A Pennsylvania State University graduate, he has, in his fifteen years with CGW, managed a number of manufacturing operations along with developing workshops for, and training managers from the first line to Plant Manager. Mr. Propersi managed the development and co-authored CGW's Total Quality Management System and Communication and Group Dynamics Seminars, both of which will be presented to all of CGW's 24,000 employees worldwide. He has been a member of the IAQC since 1982 and has been a past Conference presenter. Mr. Propersi has corporate responsibility for the Quality Circle Process.

Measurement for Beginners - You Can Do It Too

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All organizations that have Participative Management are looking for simple ways to measure this program. You need to look at participation and how it varies along with attendance and management involvement. Our measurement tools will help you recognize weaknesses and strengths that may otherwise be overlooked. The reports generated from your data can be submitted to your steering committee and CEO to satisfy their need to be aware of what's happening.

The West Jersey Health System is a four divisional hospital with over 3,000 employees. This organization was the third hospital in the nation to establish a Quality Circle process. The pilot program which began in April 1981, consisted of seven circles in three divisions. Garden State Community Hospital became the fourth division of the West Jersey Health System in 1982 and established Quality Circle at that time. There are currently 80 active circles, three full-time and one part-time facilitators, all with a combined total experience of 16 years.

We have found a good indicator of the success of this process is measurement.

We initially administered an attitude survey in 1981 developed by the University of Pennsylvania.

It quickly became evident this in itself was not enough. With the assistance of our measurement committee we developed simple and easy to use measurement tools to evaluate the groups and their participants on an on-going basis.

The indicators that we have measured are:

1. Total number of Circles
2. Number of new Circles
3. Number of meetings scheduled
4. Number of meetings held
5. Number of meetings cancelled
6. Number of meetings attended by management
7. Number of solutions self-implemented
8. Number of management presentations
9. Mean % attendance at meetings (range)
10. Mean % participation (employees scheduled per 24 hour period)
11. Mean % participation
12. Number of inter-departmental projects
13. Number of inter-divisional projects
14. Number of problems being addressed
15. Number of problems quality oriented
16. Number of problems productivity oriented
17. Number of problems quality and productivity oriented.

We will present easy to use forms on a monthly basis. An accumulative report which will help you recognize weakness and strengths that may be otherwise overlooked.

The reports generated from your data may be submitted to your Steering Committee and C.E.O. to satisfy their need to know what is happening.

Without measurement you have no data to justify your existence and continued growth.

The Juggling Act: Keeping Quality Circles a Top Priority

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Many Facilitators assume responsibility for a Quality Circle program in addition to their existing job. Facilitators often find themselves the "star" of a juggling act -- juggling priorities. These Facilitators need practical techniques, useful tips and a little extra support to keep Quality Circles on the top of their priority list.

This paper addresses the juggling act dilemma and provides proven, time effective methods to strengthen management support, leader cooperation, and member participation. New ideas for tired "jugglers" will help overcome the obstacles of managing Quality Circles in a multi-demand job.

No one asked you if you could handle two jobs at once, but here you are, the new Quality Circle Facilitator or Coordinator, and your "other" job hasn't gone away. Priorities are becoming confused, routine matters seem to pile up, and any problems that arise seem to destroy any progress you are making.

It is obvious that something will end up on the bottom of your list, and since Quality Circles are your "extra" responsibility, it is all too easy to let them slip. How, then, can you juggle your priorities to ensure your Quality Circles stay on your priority list?

Traditionally accepted methods for managing two jobs at once are rarely effective. Time management seminars can be helpful, but who has the time to attend one? You could increase your staff to lend assistance, but typically the funds are not available. You could refuse to take on the added responsibility for Quality Circles, but then you would neither grow professionally or personally.

Streamlining your program to most effectively utilize your time and the time of others involved can help solve this dilemma. In order to approach a solution in an organized manner we must first identify the key elements of a successful Quality Circle program, and then determine the most time effective approach to fulfill these requirements.

The Key Elements of Quality Circles

MANAGEMENT SUPPORT:
Gaining and sustaining active management support is essential to the success of any employee involvement program. The Steering Committee, middle managers and supervisors need to know exactly what is expected of them. This group of individuals also requires recognition for their contributions if you expect to maintain a high level of commitment.

LEADERS:
Initial training of leaders is not enough. These key personnel require guidance, recognition and ongoing training in order to help combat burnout.

CIRCLE MEMBERS:
The excitement of a first project wears out quickly and subsequent projects can drag as Circle members lose their initial enthusiasm. Projects may fizzle out and implementation times may slow down. Members may begin to feel neglected. It is essential to sustain member interest and to ensure each member receives adequate recognition.

FACILITATOR/COORDINATOR:
You, as Facilitator or Coordinator, may find yourself inundated with paperwork, dealing with circle motivation problems and working long hours that can affect your personal life. Your needs are important and you require assistance in performing your "juggling act".

Juggling Your Priorities

Each of these areas require your time and attention. How much time you can devote to them depends on your personal situation and on how well you manage your time. There is no magical formula that exists to make your problems disappear, but we can learn from each other and take steps to manage what time we have in a way that will leave Quality Circles a top priority.

Step 1: Ensuring Management Actively Supports Quality Circles

In order to assure management is well aware of their role in Quality Circles, we must define "management support". The following "definition" of management support is utilized at Arcata Graphics/San Jose. Your own definition should be tailored to your particular needs.

MANAGEMENT SUPPORT REQUIREMENTS

1. Make Time Available For Circles By:
    a. Ensuring superintendents are allowing employees to attend weekly meetings (covering shifts in advance).
    b. Making sure supervisors are aware of Circle activities and know that our management supports employee involvement.
    c. Attending Management Presentations (arriving on time). If you are unable to attend the presentation, make a point to visit the Circle as soon as possible to review the project that was presented.

2. Understand The Process And Be Patient By:
    a. Understanding that problems are rarely solved effectively overnight.
    b. Realizing that most Circle members are "learning as they go". Don't give up hope on these members -- they are really trying.

3. Show Your Interest Through:
    a. Assisting Circles whenever requested. This is something that should not be delegated unless absolutely necessary.
    b. Providing guidance. Make sure divisional and departmental goals have been clearly explained to Circle members.
    c. Offering constructive criticism. Members will grow personally and professionally if you tell them what they are doing incorrectly AND how they can correct (or improve) the situation.
    d. Spending one hour and fifteen minutes (spread over three months) in actual Circle meetings. Meeting attendance goals: During a three month period --
        - Drop in on a Circle and spend five minutes getting an update on their current project.
        - Drop in on a Circle and spend five minutes showing your support (pat on the back time).

- Drop in on a Circle and spend five minutes giving (or getting) an update on project implementation status.
- Attend a one-hour meeting. Participate in any brainstorming sessions and offer input. You should contact the leader prior to attending the meeting in order to review the agenda.

When dropping in on a Circle for your five minute sessions, make sure you tell the Circle why you are there and that you will be there for only five minutes. This should help keep the members from turning your visit into an opportunity to "gripe".

4. Give Recognition By:
   a. Praising efforts at the Management Presentation.
   b. Visiting a completed project site and talking to the employees about the results.
   c. Using contributions of members and leaders on Performance Appraisals.
   d. Including Circle activities in your weekly/monthly reports.

5. Practice The Quality Circle Philosophy Yourself By:
   a. Asking employees for their input when making decisions which will affect them.
   b. Involving employees with problem solving in your department.
   c. Listening to employees and answering them constructively (if you say "no", tell them why).

Step 2: Provide Recognition To Management

Managers and supervisors contribute greatly to quality circles. Their support, or lack of support, can make or break the entire concept. It is important that these individuals receive recognition. Several time and cost effective alternatives are described here.

I. Train managers and supervisors in Quality Circle techniques. Not only will this give them a better understanding of the QC philosophy and procedures, it will also help dispel the manager/supervisor's fear of knowing "less" than QC members. This is, of course, time consuming but it is well worth the effort. The time problem can be overcome by including the managers and supervisors in the actual Circle member training sessions.

II. Keep managers apprised of Circle progress. Verbal communications are normally more effective than written, so attend a staff meeting once each month to relay any current activities. If you wish to provide written information, send a copy of each Circle's minutes to top management, or post them in a general area.

III. Recognize the contributions of those departments which are most heavily affected by Quality Circle projects (typically the Engineering and Maintenance Departments). More likely than not, these department members are already carrying a heavy work load and it is very easy for them to view Quality Circle projects as simply "extra work". It is essential that these experts are utilized in the early stages of problem analysis to eliminate any possible surprises. Implementation plans should be a joint effort by the Circle and the departments that will be affected. Each departments' priorities and time schedules must be considered carefully. Recognition of department members who assist Circles should be a matter of standard practice. All employees who assist with project implementation should be included in presentations and their names should appear in any written publications pertaining to the project. These department members should also be included in any recognition events/programs (luncheons, dinners, etc.).

Step 3: Assuring Leaders Receive Necessary Guidance, Training and Recognition.

Leaders are special people. Whether they have volunteered or been volunteered for the job, they are essential to the success of the Circle. Members rely on them for support, guidance and motivation. Busy facilitators will tend to neglect the "good" leader and concentrate on improving the "bad" leader. Actually, it is your best leaders who will suffer from burnout the earliest. Facilitators can motivate, guide and train leaders with little time commitment by utilizing the following suggestions.

I. Dealing with Leader Burnout

- Spend five minutes after each Circle meeting assisting the leader with preparation of the next meeting's agenda.

- Assign another member as leader for the next project.

- Give the leader one week off each three months.

- Adopt a rule within the Circle that the last member to arrive functions as the leader for that particular meeting.

II. Providing continuous leader training

Hold quality leader meetings that last no more than 1½ hours and include the following:

- Leader Circle Discussion--to analyze problems leaders are encountering (membership, attendance, burnout, etc.) and to set goals for the following quarter.

- New Quality Circle Tools and Techniques--to add variety and to review existing resources.

- Creativity/Motivation Exercises--to rejuvenate leaders and provide exercises that can be taught to Circle members by the leader before brainstorming new projects.

- Ways to Change the "External" Environment of Circles--to generate ideas for new ways to conduct management presentations, ways to increase visibility of Circle projects and accomplishments, and to discuss the possibility of developing Circle competitions and/or cross functional teams.

III. Ensuring leaders receive adequate recognition

- Provide dinner after quarterly leader meetings.

- Take leaders to Chapter meetings (alternate each month).

- Visit other divisions or companies with QC programs.

- Give special recognition to leaders at an annual banquet or other event.

- Issue training certificates to leaders during various phases of training.

- Talk to the leader's supervisor to ensure the leader's contributions are included on performance appraisals.

Step 4: Sustain Circle Member Interest

Keeping Circle members interested and motivated cannot be left solely to the leader. The Facilitator can assist the leaders in providing ongoing training, project implementation assistance, provide ways to combat Circle burnout and Circle recognition.

I. Providing ongoing Circle training

- Facilitators should ensure that leaders include new quality circle technique training or creativity exercises at at least one meeting each month (do not use entire meeting time for training - 10 to 20 minutes will do).

- Provide copies of articles on other division or company Quality Circle programs and accomplishments.

- Provide a Quality Circle Journal subscription to the Circles.

II. Provide project implementation assistance

- Assign Project Managers for each approved project. One "manager" should be a Circle member and the other should be a member of the Steering Committee.

- Use an Advisory Committee to act as a "go between". The Advisory Committee should be a group of middle and top managers (not members of the Steering Committee) from a variety of areas who are willing to lend assistance to Circles when requested.

- Ensure Circles include project implementation progress reports in each management presentation.

III. Assisting Circles in combating burnout

- Allow Circles to take a break after each presentation (no more than two meetings).

- Conduct a semiannual general member meeting (which includes Steering Committee members) to generate enthusiasm. The meetings should last no longer than one hour and the agenda should allow for each Circle to participate.

IV. Providing recognition to Circle members

- Management presentations are an excellent source of recognition, if your Steering Committee is well trained (refer to Management Support Requirements list).

- Submit Quality Circle articles to your company newsletter. Have the Circle members write an article on their current project, training they have received and/or an end-of-year progress report.

- Post Circle minutes in the cafeteria, etc.

- Visualize Circle projects by marking the actual work with the Circle's name.

- Have the Circle give their management presentation (after Steering Committee has approved the project) at crew meetings. Not only will this provide recognition to Circle members, it will also help other department employees understand how and why the project will be implemented.

- Hold an annual Anniversary Luncheon for Circle participants. Speakers from each Circle can give a brief summary of the year's accomplishments, the Facilitator can reveal the next year's goals, and management can praise the efforts of everyone involved. Participation certificates can be distributed at this event if you like.

Step 5: Satisfy Your Own Needs

You, as Facilitator or Coordinator, deserve the same amount of attention as any Circle participant. The ideas in the first four steps should help you reduce the amount of paperwork generated by Circles and save some of your time. This last step will cover paperwork required from you, overcoming supervisor's lack of cooperation, reducing the effect of your Circle responsibilities on your personal life, and finally, obtaining the recognition you deserve.

I. Minimizing paperwork generated by the Facilitator

- Keep one sheet of paper on each Circle to list the name of each project, date approved or rejected, cost and savings information, and any special notes of interest.

- Write quarterly status reports which include only the information management feels is necessary. These reports should also be sent to Circle leaders to share with Circle members.

- Keep one file for each Circle project and add a summary sheet when the project has been completed.

II. Overcoming lack of cooperation by supervisors

- Utilize an Advisory Committee to help overcome obstacles.

- Get the clout of the Steering Committee behind you to help deal with difficult supervisors.

- Be honest, understanding and tactful when dealing with supervisors.

III. Limiting effect of Circles on your personal life

- Once a Circle is confident and the leader seems to control the group well, begin attending their meetings every other week.

- Ask a department head or Steering Committee member to attend a meeting in your place.

- Train an interested, under utilized employee to facilitate part-time. A great resource of people can be pulled from employees who have suffered industrial injuries and can handle "light duty" for a period of time.

- Keep a calendar with you at all times. Don't be afraid to cancel out of a meeting, especially if you are not in a good frame of mind. Just showing up is not enough, you need to be prepared and motivated -- if you are not, your attitude will rub off on the members.

  - If you have a family to feed, and your Circle meetings keep you later than normal at work, learn the time saving miracle of food processors, microwaves and crock pots!

IV. Giving yourself the recognition you deserve

  - Be proud of Circle accomplishments. Review those "end-of-year progress report" articles your Circles wrote.

  - Add your facilitation role to your resume.

  - Attend an IAQC Advanced Facilitator workshop or other related seminar. Not only will you increase your knowledge, you will also meet people who, believe it or not, have many problems similar to yours.

  - Attend the IAQC Spring Conference and add a weekend before or after to enjoy and relax!

We don't "make" time -- everyone gets 168 hours each week, it is how we manage the time that counts. The items discussed above will assist the Facilitator /Coordinator in juggling the priorities of Quality Circles while maintaining their effectiveness, even in a multi-demand job.

BIOGRAPHICAL INFORMATION

Barbara Schimek, Personnel Manager for Arcata Graphics/San Jose, has been involved with Quality Circles for over three years. She successfully implemented Quality Circles in the manufacturing, support and white collar areas of Arcata's union printing facility. Barbara has over 10 years experience in the Human Resources field and is currently pursuing a B.S. degree in Organizational Behavior. She is also an active member of the American Business Women's Association.

K: Consulting Services

Quality Circles Services: Consulting Service (Also known as State Q.C. & C. Inst. Inc.)

Sud Ingle
President, Quality Circles Services, Fond du Lac, WI 54935

Quality Circles Services was founded by Sud Ingle to promote Q.C. philosophy around the world. Quality Circles Services has trained more than 5,000 people and conducted more than 500 courses. Quality Circles Services Training Materials are used by more than 70,000 people in Manufacturing as well as Service Organizations. The following services are offered:

1. In-house Training
2. Training Materials-- Books, Videos, Slides
3. Publish Quarterly Journal -- 'Q.C. Trends'
4. Correspondence Courses
5. Group Workshops

Quality Circles Services believes that quality improvement is a never ending job. To meet this need, on-going training is necessary. Based on 15 years of experience in the Quality Control Field, the following activities are conducted by Quality Circles Services.

Workshops Offered

Various Workshops are offered on the topics of Employee Involvement, Total Quality Commitment, S.P.C., and Self and Team Development. The unique feature of these Workshops is -- person to person interaction between the Workshop leader and the participants. Quality Circles Services offers public Workshops once a month at various locations in the U.S.A. We also offer on-site customized in-house training to the employees and management of service and manufacturing organizations. The in-house trainings have been conducted in organizations throughout the world.

Quality Circles Services has developed a new Workshop to meet the needs of the Facilitators and Coordinators that feel burnout and stagnant in performing their jobs. This Workshop is designed to guide them in personal growth and help achieve job satisfaction through team effort. This Workshop is titled: 'Self and Team Development for Facilitators'. The key features of this Workshop are:

1. Self-development process
2. Team-development process
3. Organizational-development process
4. Managing for Change
5. How to Analyze Failures
6. How to Start Management Work Teams
7. Advanced Group Dynamics
8. Prepare Action Plan to Increase Your Effectiveness
9. Managing for Q-PEC
10. Implementing Ringi System

Training Materials

Quality Circles Services has developed a wide range of training materials including books, videos, slides, manuals, handbooks, and correspondence courses.

Our best selling books are:

1. 'Quality Circles Master Guide'
2. 'Quality Circles in Service Industries'
3. 'In Search of Perfection'
4. 'S.P.C./S.P.S. Handbook for Managers'

A new book soon to be released is titled, ' 50 Ways to Improve Quality Circle Process'. This book gives practical tips on improving Q.C. Process in the areas of:

1. Burnout Problem
2. Training
3. Management Support System
4. Financial Support
5. Integration with New Programs

Quality Circles Services has developed various video programs on Quality Management. These programs come with Trainer's Handbook, Participant's Workbook, and Training Modules. These video programs are:

1. 'Implementing Quality Circles'. It is an 8 module program designed to implement Employee Involvement Process at the organization. There are two types of programs -- one geared to Manufacturing organization needs and the other geared to Service organization needs.

2. 'How To Maintain, Improve, and Expand the Quality Circle Process'. This

55 minute comes with practical tips on the problem of keeping the Q.C. Process alive and enthused at all times.

3. 'Organizational Quality Improvement'. This is an excellent 10 module program on creating total quality commitment in an organization. It zeros in not only on middle management commitment but also on the top executives active participation in the total quality improvement process.

Correspondence Courses

If once cannot attend the public workshops, Quality Circles Services offers the following correspondence courses, which enables people to work with the information at their own convenience, in their own surroundings and on their own time! The courses are:

1. Basic S.P.C. - Statistical Process Control
2. Implementing Ringi System
3. Advanced S.P.C. - Statistical Process Control
4. Practical Statistics for Non-Statisticians
5. Group Problem Solving Process
6. Implementing Effective Quality Audits and Quality Cost Analysis

New S.P.C. Services

Do you feel that you are missing the boat? S.P.C. is a buzzword today. Everyone is trying to implement S.P.C. without realizing how to integrate S.P.C. with Q.C. and other improvement programs. Quality Circles Services has developed a new Workshop titled, 'Implementing C.W.Q.C./S.P.C.'. Quality Circles Services has numerous texts written on this topic. A five tape video program on S.P.C. has been developed which includes topics such as:

1. Introduction to S.P.C.
2. Construction and Use of Average ($\overline{X}$) and Range (R) Charts
3. Construction and Use of Percent Rejected (p) Charts
4. Construction and Use of Median and Range (R) Charts
5. Interpretation of Control Charts

The other Workshops that Quality Circles Services conducts on S.P.C. are:

1. 'Managing S.P.C.'
2. 'S.P.C. - Basic'
3. 'S.P.C. - Advanced'

Q.C. TRENDS

A quarterly journal, published 4 times a year - February, May, August, November. This journal is dedicated to Quality Improvement training, Quality/Productivity Management and Quality Circles Philosophy. Major topics discussed in Q.C. Trends:

1. Quality Management
2. Quality Circles/E.I.
3. Q.I. in Service Organizations
4. Japan Today
5. S.P.C.: Statistical Process Control
6. Offline Quality Control
7. Quality Technology
8. Just-In-Time
9. Productivity Improvement
10. Automation and Computers
11. And many other articles

There are two special features in which Q.C. Trends provides recognition to Q.C./E.I. Teams.

1. Honor Roll Call Section - In this section, Q.C. Trends lists names of Teams that have been sent in by their Facilitators/Leaders. The company receives two complimentary copies of Q.C. Trends.

2. Q.C./E.I. Team Registration - Facilitators/Leaders send in the names of Teams and Team Members to be registered with Q.C. Trends. These names appear in the centerfold of the journal. A certificate with many other services are offered to the registrants. The idea behind the registration of Teams is to form a network of Teams from around the world to establish Quality Circles as a Way Of Life!

A Look At The Future

Quality Circles Services believes that the Employee Involvement Process goes through phases such as Training, Follow-up, and Expansion. It is of the utmost importance that the various improvement programs such as Just-In-Time, Q.C., Self-managed teams, and S.P.C., be integrated in the organization to beat foreign competition! Quality Circles Services has started offering a new program called 'Managing for Q-PEC'(Quality, Productivity, Efficiency, Cost). Implementing Q-PEC Concept in an organization is the key to the future success.

Why Quality Circles Services?

Quality Circles Services carries years of experience and expertise in their training processes. A person to person approach is established with the client based on the needs of the organization. The training is conducted with a total approach to quality management through various phases of implementation. Quality Circles Services goal is to get the best of the people and make it work for the success of the organization and the satisfaction of the employees.

Some of our satisfied clients include:

1. U.S. Can
2. Johnson Wax
3. Secura Insurance Co.
4. Brunswick Corporation
5. Miller Electric Manufacturing Co.
6. Ripon Foods
7. Air India
8. Miama Valley Hospital
9. Boeing Bertol
10. Prince Co.
11. American Express
12. General Motors
13. Heath/Zenith
14. Tele-Mexico
15. FAA

Biography

Mr.Sud Ingle is the President of Quality Circles Services, Inc., a training firm based in Wisconsin. He holds a M.S. Degree in Industrial Engineering from Purdue Univ. and a M.B.A. from U of Wisconsin. He is widely recognized as a pioneer in the Quality Circles movement in the U.S.A. He is one of the co-founders of I.A.Q.C. Mr. Ingle is the editor of a quarterly journal, 'Q.C. Trends', and has authored over 20 books on Quality Circles and Quality Improvement. He has spoken to thousands of people on the Q.C./E.I. Concepts in hundreds of sessions worldwide. He has also authored a number of articles in various magazines and newspapers around the world.

Getting Results From Employee Participation

David Richey, Ph.D.
President, Quality Groups

Achieving total employee participation requires extensive supervisor and management training. Dr. Richey will share how a four day training program can be delivered by your own people. This program makes the values of your organization visible. Learn how to use existing human resources to their maximum potential.

Many organizations operate employee involvement programs. Research indicates middle level management and front line supervisors do not recognize the benefits of using practical Quality Circle tools everyday. As a result, employee participation is only a one hour a week phenomenon.

This program focuses on the art of organizational change through the use of employee participation. Participants will learn how to organize resources and how to use them to improve. Additionally, the participants are treated as unique adult learners. Emphasis throughout this experience is on practical, proven, "how to" methods of applying employee participation theory to create dynamic learning experiences for adults.

For the past year, the four day Getting Results From Employee Participation Workshop has trained over two thousand managers, supervisors, and employees. Its objectives include development of personal and professional coaching skills for total employee participation.

Within this presentation, the key ingredients to marketing and expanding employee participation programs will be presented. The session will focus on how to sell employee participation training for everyone in the organization. The concept of human resource development and assessment of current levels of success will be presented. Participants will leave this workshop with new tools for program expansion.

The development, design, and delivery of the four day workshop will be presented. Specific side effects of this session will be the exchange and networking with other practitioners on ways to cause their organizations to improve. Specific strategies for organizational improvement will be presented. This session will utilize the skills that it teaches, namely interaction and involvement. Discussion highlights will include:

- Strategic Planning
- Training For World Productivity
- Return on Investment
- Marketing Your Program
- Using Positive Reinforcement

The comments of a past participant best describe the results of this workshop. He says: "The Getting Results "learner-centered" teaching style should be bottled and distributed to everyone who has to instruct others."

Getting Results From Employee Participation requires the development of an environment where people have spirit. In addition, they need cooperation, commitment, and personal initiative rather than an atmosphere of tight control from above. As a result of developing this environment, major benefits are obtained by the individuals in their personal and occupational lives.

Major Benefits

A major benefit obtained is an increased understanding of the manager's role in developing the commitment of their work group to the goals of the organization. This results in better performance from all work units within the organization. The leaders of today need the knowledge of statistical problem solving methods. The approaches have been extensively field tested with over two thousand managers. Many of the participants have been frozen in their roles and views of their jobs. It seems that many managers are aware of the need for participatory leadership but few actually understand how to be one. The usual predicament they express is a condition of little or no true training in how to best utilize their people. Some are reluctant to change but understand they soon might not have a choice.

Significant Emotional Experience

The several hour training program on fair labor practices or safety procedures has not provided the intensity to evoke strong emotional commitment. An intensive experience can change a persons thinking so that a new behavior pattern is desired. Most experts agree that the middle manager is the most likely to strive against efforts to get employee participation. The problem is how to train them and still get the job done. They often perform a critical job close to the actual production in any organization. Its hard to take them out of their work area to educate them of the importance of involvement management methods. But it must be done. They must walk the walk and talk the talk in order to communicate the importance of each employees ideas and importance.

The following is a sample of some of the materials found in the Employee Participation Leadership Resource Book. It illustrates specific content and format of this training program.

The following was written and developed by David Richey, Ph.D. and numerous associates, to serve as a guide for people interested in employee participation and leadership. The uses of this guide are numerous. A practitioner may compare his current approach with the ones proposed. The outlines should provide thought provoking discussions, and perhaps even catalysts for action. Each section was designed to serve as a resource for four hours of workshop programming.

Employee participation is geared strictly at helping a person achieve his/her potential by providing some modern resource materials. "Getting Results From Employee Participation" is designed to offer readers and workshop participants an in-depth look at state of the art methods for both formal and informal employee participation activities.

This resource book is divided into eight sections for easy use:

Section One:	Stresses the importance of leadership in improving the national and world productivity picture.
Section Two:	Identifies some of the processes of goal setting. This Section also focuses on the power of long range strategic planning utilizing Quality Circle techniques to insure lasting employee involvement.
Section Three:	Makes Quality Circle techniques understandable. Within this Section, you will learn how to collect data and measure results of employee participation.
Section Four:	Provides a look at cause and effect relationships and how to make management presentations.
Section Five:	Identifies how the effectiveness of a leader is shaped by his/her ability to communicate successfully.
Section Six:	Focuses attention on the leader's necessity to market and promote his/her program. This naturally involves discussion of group dynamics and team building.
Section Seven:	Stresses importance of the identification of a road map to help your organization change. It also looks into the basics of human relations through case presentations.
Section Eight:	Explores the importance of recognition, reinforcement, and your personal efforts.

This resource guide can be the catalyst to help you become the type of leader you want to be. What you do determines your success. The basic principles and guidelines discussed will help you be more positive and effective with people.

Training Approach

These training materials provide "how to" information. We believe training should be designed to effect measurable change that will improve a participant's productivity, ability and practical skills, with a minimum expenditure of resources.

This training provides useful information that would take months or years to learn from work experience alone. These materials are designed for people who want a thorough understanding and an intensive learning experience.

This workshop is a starting point for a new view of the importance of employee participation and its effects on quality and productivity. It will provide numerous real life examples of these principles in practice within companies. In addition, bibliographical references will be supplied.

The presentation will not only be informative, but will be interesting-filled with humor to enhance the learning process. Our practice is to use the principles we talk about. As a result, sessions actively engage the participants in the learning process. This approach provides an opportunity for practice of learned skills. These opportunities are a part of our agenda. Changes in training techniques, for example, moving from lecture to exercise to audio visual to discussion sessions keep participants more receptive to learning.

Length of Program

The length of this program (four days) is required to give participants time to absorb all of the new information and time to participate in the exercises. The exact materials covered have been identified as critical by practitioners in the field.

Overview

A good manager utilizes every resource available to achieve success. Every individual, faced with the responsibility of leadership, begins with the same basic resources. How the resources are applied and utilized makes the difference between success and failure. This resource book has been written with a preconception about effective leadership. The underlining philosophy represents the combined experience of the authors. Our goal is to provide a very clear and concise method to increase the use of the greatest natural resource of any company or organization...its people. It seems many employers primarily employ bodies and not the whole person. The scenario which follows illustrates the point. An Employee says: "I have a good idea!". The Boss responds: "Get back to work! We don't have time for your ideas." Good managers understand that people produce results.

Employee participation is a concept from which almost every successful American company evolved. Someone decided to do something different. The idea, carefully developed, is turned into an income producing product or service.

As a result of organizational requirements some people, due to their education, family ties or past success, are identified as management. Yet the skills that maintain them in their position are often not very impressive. In fact, many managers act foolishly in their position of appointed power. Some managers run around all day telling others what to do, displaying a gross disregard of the psychology of human motivation. As a result, many of their employees become increasingly less motivated as their term of service continues. Many managers seem surprised, disgusted, and perplexed at an employee's loss of ambition. Some even notice that many employees started out inspired, motivated and gung-ho, but, after a few years just seemed to loose their ambition, drive and interest.

Why is it that one can find more excitement in the bowling alley, than in the factories or offices across our great land? This resource book presents a straight forward strategy for understanding why employee concern and motivation is often missing and how it can be improved.

Uses of This Book

The function of this book is to illustrate the major advantages of utilizing employee participation. It is understood that the employees already know the benefits of participation. The goal of this book is to show management that it is their duty to entice and promote employee participation. This is in contrast to the approach of convincing employee that it is their responsibility to participate.

We believe management must learn how to use specific techniques, including praise, to radically increase the level of employee participation. These techniques are systematic approaches to improving communication and performance.

Unfortunately, no one changes without a reason. It is therefore our goal to show employees and interested management how to present or sell the case for increasing employee participation. We acknowledge the fact many individuals are in management positions who already hold the right mind set but feel unable to implement the techniques due to the "Organizational Climate" or "Upper Managements Wishes". This book provides data and analysis to support your efforts toward increasing employee involvement and participation. The arguments developed within these sections have been developed by practitioners, managers, and consultants who have been trying to sell these techniques to management for a long time.

The material has been arranged in a format which lends itself to being used as a course for management and leadership development. Each section has been designed to stand alone just as the pillars of a temple stand singly. They form a powerful base for organizational development. A trainer could present any section or subsection to a group of managers and it would inform and entice them to encourage employee participation. Questions and space for answers have been included to allow for the personalization of the material. Employee participation cannot be passively accepted. It is rather like a controversial moral issue. Most people feel strongly about employee participation one way or the other. At this time it appears managerial ignorance is the primary justifiable reason for not involving employees in their jobs.

Recognizing Employee Participation

Since so many variations of employee participation exist, it might be helpful to outline some of the various kinds of participation available from the employee. Ideas that improve the functioning of an organization come from all employee levels. A part time worker often has the perspective to comment on the problems of a procedure or process with the wisdom of a highly paid consultant. Yet, "How often is that individual asked to comment on such items?"

The normal American worker is a creature of habit and past training. Unfortunately our school system has trained most of us not to speak without raising our hands. Inadvertently, the system has programmed us to be passive, withholding comment until we are asked. The differences between an organization that asks for input and ideas and one that does not is significant. It's a number's game. The more people looking for improvement, the more likely it is that the way will be found. Even so, many managers never ask for ideas. Instead they tend to support the past habits of employees by acting angry if one should so much as say "Hello". The constant fear of loss of employment is held over the workers head.

An organization that evaluates itself on a continuous basis is committed to employee participation. Let's visualize a small group session in a CEO's office where the big boss says: "Okay, guys take a few minutes and write down how I could improve". The room would be deathly quiet. The only noise heard would be the sweat hitting the table top. Why would any one want to commit professional suicide? It has been never very wise to disagree with your boss. The management of the future must transcend ego gratification. They will study their mistakes and even ask for feedback from their employees.

Employee participation takes many forms. One outstanding system to promote employee participation is called a Quality Circle. I use the word "system" because with Quality Circles, a set of specific techniques are used in meetings - one hour each week. Small groups of people work to resolve problems within their work areas.

True employee participation comes seven days a week. It is a way of life, not an hour a week experience. Everyone participates even if they don't attend the one hour group meetings. Quality circles are a good way to start employee participation because they provide time to train and to solve problems as a group. "Espirit de corp" is generated. For that reason, a good portion of this resource book is devoted to the procedures for leading, installing, and expanding Quality Circles. It is important to remember, however, Getting Results From Employee Participation requires more than just a Quality Circle Program. It requires knowledge of how to use data to manage and train. It involves the use of feedback and positive reinforcement. For example, if a manager tells his employees to "Shut Up and do your job" it is highly unlikely that employee participation will work even if Quality Circles do exist. Employee participation is increased as a result of people showing concern for each other's point of view. Basic communication skills and the ability to be a supportive listener, are just as important as knowing how to use a check sheet. Major work innovations and improvements are a result of trust and risk taking within your organization.

Employee participation offers a dynamic approach to business at every organizational level. It is aimed at improving productivity, controlling costs, and increasing managerial effectiveness. The program increases job satisfaction and morale, while building a strong sense of teamwork and pride. The program is tailored to a company's total training needs.

A unique feature of employee participation is its ongoing support during the implementation of planned changes in company procedures and/or operations. Requirements for training and changes in work procedures are developed through group participation. The employee participation approach is based on the belief that people know the job problems. With the assistance of facilitators, the people in your organization learn to identify problems affecting their productivity, investigate these problems and develop solutions.

Employee participation programs often have weekly meetings,in small groups, which are led by a leader or facilitator. Facilitators are highly trained to use a number of techniques to increase group effectiveness. The group develops teamwork and problem solving skills. After sufficient training and experience, the other members can assume leadership of the group.

Performance Management

Performance management is a systematic, data-oriented approach, aimed at improving communication and cooperation among personnel at different levels in the organization, particularly between managers and nonmanagers. Managers are shown how to identify key behaviors that will increase performance and improve attitudes necessary for company growth. This approach is highly structured and clear steps to improvement are outlined. Employees are shown how to monitor their own daily performance; therefore, less supervision is required and managers are freed for tasks more central to the management process.

Positive performance management has several elements. First, managers identify the specific and detailed tasks the employee is to accomplish. Second, the expected performance is clearly communicated to the employee. Finally, positive consequences in the form of reward and feedback are provided to the employee for task accomplishment.

This approach is practical and specific. Everyone is capable of learning this total performance system. Among the most beneficial aspects of this method are measurable improvements in productivity and employee satisfaction.

Group Dynamics

Group dynamics is present whenever people interact. Research on the interactions of persons in small groups has been conducted since the 1890's, and there has been a growing scientific interest in understanding and assisting groups. Particularly important is the identification of the conditions under which individuals grow and develop within groups.

Facilitators are trained in specific techniques for directing small groups and fostering increased growth and teamwork. As stated earlier, group members are aware of the nature of their job-related problems. The trainer's task is to facilitate the process of problem identification and solution through the application of the principles of group dynamics. Performance management is one procedure for guiding groups, in positive directions, through the use of reinforcement and feedback. Facilitators reinforce individual behaviors that contribute to the groups progress and ignore nonproductive or counter-productive behaviors.

Summary

Most employee participation programs draw on the format and technology of the Japanese Quality Circles. The implementation of quality circles in the United States has met with some outstanding successes, but more often, there has been little impact on production and profits. Failures result from insufficient facilitator training, and a general inability of managers to respond positively to the attempted employee involvement fostered by quality circles. A proper program eliminates these problems through long range training, and by involving managers in a positive way with employee performance. This program is designed to produce positive growth and production through its influence on all organizational levels of a company. A good employee participation program represents a unified approach to improve employee job satisfaction, morale, production and managerial efficiency.

By the end of this workshop, it is expected that participants will know how to:

- Use existing human resources to their maximum potential.
- Establish, lead and facilitate employee participation programs.
- Speak more effectively.
- Use group dynamics techniques to build teamwork and positive communication.
- Market and sell employee involvement to managers and supervisors.
- Apply the basic problem solving techniques of Quality Circles to measure and report results.
- Involve steering committee and top organizational support.
- Handle resistance to change and difficult situations.

Dr. David Richey, Clinical Psychologist, has been a highly rated speaker for the past four IAQC Conferences. He is a past IAQC Chapter President and has assisted in the installation of Quality Circles with Sales, Service, and Manufacturing Organizations. He has published Warm Ups For Meeting Leaders, and is author of Getting Results From Employee Participation and Employee Participation Recognition Systems. His programs are lively, interactive, and educational.

Dr. Richey is an accredited speaker and polished platform speaker. He is president of Quality Groups, a consulting firm based in Ventura, California. He has influenced hundreds of organizations to adopt programs to involve employees.

John Hancock and ODI: An Experience in Integrating Internal and External Consulting Services

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Successful integration of services provided by internal and external consultants depends on frequent and ongoing communication. In this case presentation, John Hancock and ODI describe how they have worked together to implement a successful employee involvement process. Working together, they have combined their products and services for continual "pulse-checking" of program vitality and success.

In the Spring of 1985 the Group Insurance Division of John Hancock was looking for ways of improving quality and ultimately reducing costs. Because employee involvement is continually gaining recognition as a quality improvement and cost-reduction tool, the Senior Vice President of the division assigned a staff member to investigate available employee involvement options. The internal Training Consultant for the Division was invited into the process of identifying an external consultant to assist Hancock.

The staff member and the internal consultant agreed on five criteria for selection of an external consultant:

- Assurance that an accurate diagnosis of the situation would be made and that the appropriate service/good would be offered
- Confidence that the service/good would be readily available and that a structured support system would be provided
- Known service/good, along with a result or action, would be purchased by a specific expenditure
- Internal ownership of the process would be retained
- Confidence that the provider of the service/goods had a track-record of success and support

After reviewing the options, Hancock decided on the products and services offered by ODI.

What has followed is a collaborative effort by consultants in both organizations to insure success of the effort. As a generalist, the internal consultant is equipped with the abilities to uncover the problems or issues specific to the organization. The internal consultant knows the political environment and the organization's day-to-day issues. The external consultant as a specialist, contributes in-depth technical expertise in the services provided. External consultants give an objective viewpoint, especially as related to realistic expectations and implementation alternatives.

Two products were offered by ODI in this case. MANAGING FOR PRODUCTIVITY (MFP) is a management development process which helps create a participative management environment throughout the organization with an outcome of increasing employee performance, satisfaction and commitment. MAKING THINGS BETTER (MTB) was implemented after MFP to create a common language of problem-solving throughout the Division. MTB provides the problem-solving skills to practice participative management techniques.

These two products are frequently most successful when they are soldered together through the combined efforts of internal and external consultants. In this case, the internal consultant was involved from the very first step of decision-making, through the ongoing steps of implementation and evaluation. As a member of the executive officer's staff, the internal consultant was privy to a level of information vital to tailoring implementation to meet the specific needs of the organization. Furthermore, the internal consultant could rally support necessary to circumvent normal obstacles of implementation.

Armed with expertise on how to best make employee-involvement programs work, the external consultants gained the confidence of senior management. Paired, the internal and external consultants presented a unified front in supporting management's effort.

CHARACTERISTICS OF EFFECTIVE CONSULTANTS

Both internal and external consultants must possess similar characteristics to be effective. Among the key characteristics are those suggested by Greiner and Metzger:

- Diagnostic Ability - qualities of objectivity, intense curiosity, conceptual and analytical skills and inductive reasoning

- Solution Skills - imagination, courage and teaching ability
- Knowledge - management theory supported by research findings and applied techniques
- Communication skills - writing ability, oral presentation skills and intervention skills
- Marketing and selling skills- the skill to identify needs
- Managerial ability - the art of practicing what consultants preach
- Personality characteristics- ethical standards, empathy, positive thinking, self-motivation. team-playing, self-fulfillment, mobility, energy and self-awareness
- Skill acquisition - the ability to continually enhance and develop ones competence

In addition, and based on their experience, the consultants from Hancock and ODI suggest that when working in a combined internal/external consultant mode, three other factors are crucial.

The first is complete honesty which is necessary for building a long-term trusting relationship. Lack of trust frequently results in a negative self-fulfilling prophesy which may lead to less than desired results. The second is frequent communication. To continually implement, monitor and evaluate effectively requires significant formal and informal communication. Hancock knows that they can contact ODI when they forsee a problem, or they have an idea they would like to share. Likewise, frequent communication allows consultants to learn from each client with an eye toward continual enhancement of products and services. The third factor is a long-term perspective. Internal and external consultants must consider both short-term as well as long-term needs of the organization. The emphasis on long-term reflects the fact that quality improvement must be presented as an ongoing journey rather than a destination. As a consequence, efforts of consultants toward improvement must be seen as ongoing processes, not as projects or programs.

These factors contribute to a win/win experience for both the internal organization and the external consultant. The result is an experience where both organizations share in investigating problems, discovering remedies, and enjoying success.

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BIOGRAPHICAL INFORMATION

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L: Open

MANAGEMENT ATTITUDES AND ACTIONS THAT CREATE THE OPTIMUM PARTICIPATORY ENVIRONMENT

Harold Kay

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We are now operating in a NEW ECONOMIC ERA. The old processes for manufacturing and delivery of services no longer work -- out go the old processes! OUT GO OLD MANAGEMENT METHODS joined to them! What is the new role of manager in the new economic era?

The manager must know all the technical aspects of the business as before and maintain their technological skills at state of the art level. This has been true all along. Now, however, the competent manager must learn the new skills and language of quality and consistent output and employee participation.

ELEMENTS IN NEW ECONOMIC ERA

1) NECESSITY FOR CONSISTENT OUTPUT

The output of goods or services must be absolutely consistent every time a product is produced or a service rendered. This is true within as well as outside our organizations. Why? Very simple. We have and should have the expectation that we will receive products which perform as claimed and services which deliver as promised. This includes, of course, timely delivery. Secondly, unless completely consistent output is achieved, we canot know or maintain the cost/profit relationship for our business. This is true whether cost/profit is measured in dollars, man-hours, reports or hamburgers. We must understand the basic principle here, and I'm not referring to the P & L statement for the organization. The understanding of the basis principles lays the foundation for quality and productivity improvements which are essential in order to stay in business.

2) DRIVE TOWARD IMPROVEMENT NEVER ENDS

The "drive toward improvement never ends" seems obvious and self-evident, but it is rarely applied in our businesses. There are two illustrations that help to clarify this point. An initially successful entrepreneur may take one of two tracks. He may improve, adapt, extend his original good idea or he may stay with his original good idea past its natural life cycle and vanish with it. I'm sure you have noticed that a football team is very often most vulnerable to attack just after having scored a touchdown. We all have a tendency to want to rest on our laurels - in business, that is simply not possible.

3) FUNCTION EFFECTIVELY AS TEAMS

By definition, we are members of a team charged with the responsibility of accomplishing the objectives of our organizations. We most often go off in our various directions and ignore the organizational and team needs. We must develop the systems and attitudes that channel the "rugged individualism" into well directed contributions to our mutual benefit.

4) RAPIDLY RESPOND TO RAPIDLY CHANGING BUSINESS CONDITIONS

We must develop the agility of personnel and systems to effectively respond to unforeseen, instantaneous changes in our business environment. Energy costs, foreign competition, tax changes, Chernobyl - need I say more? You have your own set of circumstances in your company.

5) DEVELOP AND GUIDE A PARTICIPATIVE WORK FORCE

Lloyd Dobins says "Our modern demands are for intelligence, and intelligent people are simply not going to be treated like machines". People expect to participate in the operation of the business. But, whether or not they expect to participate, they must! We must have the creativity, skill, knowledge, and experience of all our employees in order to survive in a highly competative economic climate. We can no longer afford to employ "from the neck down".

MANAGEMENT RESISTANCE AND BLUNDERS

We could easily spend this entire conference telling horror stories about what some manager has done to cause us distress in our employee participation process. While it might provide the immediate relief usually accomanying venting. I'm not sure it would provide us the direction needed to create improvement. I have experienced and continue to experience these management deficiencies. My observations indicate that the resistance results from three factors. First, the manager does not understand his/her new role; second, he has had inadequate training to develop the quality measurement and participatory skills; and third, he has had insufficient guidance and assistance as he has attempted to apply the new skills.

ROLE OF MANAGEMENT

Let's start with a short discussion of attitudes because attitudes lead to actions.

Managers must teach to improve substandard performance, not berate or issue warnings. S/he must encourage and support the development of employees and demonstrate patience as they start to apply new skills. Managers must hold high expectations which lead to high performance. S/he must demonstrate an interest in team activities and share information about the business that affects the employees. The following guidelines for management actions should be utilized in a generalized manner and not used in an exclusive manner:

Actions of Executive Management

* Set and convey organization vision
* Utilize the process personally
* Establish reasonable expectations
* Spend time and money
* Verbalize support in speeches
* Include EP in manager's activity reports
* Teach managers participative behavior

Actions of Middle Management

* Member of management teams
* Reply to proposals
* Serve as facilitators
* Supply special expertise
* Cousel with leaders/facilitators/members
* Serve as management project leader
* Establish process for self evaluation-self improvement
* Chart progress of people development and problem prevention
* Uitlize teams when changes are required
* Utilize process in everyday department operations

Actions of First Line Supervisors

* Leaders of teams
* Participate in leader teams
* Facilitators

TRAINING

W. Edward Deming states, "The fact is that management can not learn by experience on the job what they must do to improve quality and productivity and the competitive position of the company. Long term commitment to new learning and new philosphy is required of any management that seeks to improve quality and productivity. The timid and the faint-hearted, and people that expect quick results are doomed to disappointment". Another way of expressing this concept: training is a process, not an event. The following list illustrates some of the initial training required:

1) Team building, active listening, group process, effective meetings, conflict resolution, creativity enhancement, etc.

2) Problem solving process and tools.

3) Application of information - based decision making, and measurement of improvement. This is the understanding of some simple but effective statistical techniques.

4) How to teach and coach employees.

IMPLEMENTATION STRATEGY

Instruction (training) and application must start at the top of an organization. We must also create a structure for support of the new way of doing business in the new economic era. We make the old obsolete by the use of superior methodology and creating artifacts (structured) not by resisting it or merely talking about it. This structure builds management participation into the process. Management people learning and applying the participative process can then intelligently manage the process. The creation of management teams develops a consensus mentality and team work and results in the resolution of some of the more frustrating interdepartmental problems. When management has received appropriate training and applied the information, a much stronger response to rapidly changing business conditions has been created. This approach also sends a message to everyone in the organization that participative problem solving and prevention and constant improvement of output is the way the organization is managed.

CONCLUSION

We often have difficulty in defining good management or leadership. Following is the way it is expressed by Mike Vance:

> "Leadership is the ability to establish and manage a creative climate in which people are self-motivated toward the successful achievement of long-term, constructive goals in an environment of mutual respect, compatible with their personal values."

I believe that is an appropriate summary for what we are attempting to achieve.

BIOGRAPHY

Harold Kay is a Management Consultant specializing in Quality Circle implementation training, and evaluating participative management processes for organizations who want to improve performance. He has provided training for thousands of people in industry, banking, health care, education and government service organizations.

Harold is a frequent speaker at regional and national conferences on topics related to participative management and served as a judge in the first U.S. regional Quality Circle competition. He has published articles on management's role in quality circles and measurement of problem solving team performance in "IAQC Journal", "Quality Circle Digest", and "Annual Conference Transactions".

Before starting his consulting practice in 1977, Harold established and managed industrial laboratories. This provided a backgroud of extensive problem solving as well as training and development of employees.

Harold is a graduate of the University of Mississippi with a degree in chemistry and is a member of International Association of Quality Circles and American Chemical Society. He serves on the Education Committee (IAQC) where he assists in design of courses offered by IAQC.

Facilitative Management

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High performance work teams presuppose facilitative management. Facilitative management is the art of developing each employee into a high performing member of a high performance team. This paper is a concept presentation on the art of facilitative management. Facilitative management is posited as the bridge between quality circles and high performance teams. An outline of the values, goals, perceptions, business priorities, and tasks of the facilitative manager is presented. In addition, the conceptual, technical, and interpersonal skills needed by managers to be competent in developing high performance teams is presented. Finally, the implications for quality circles will be discussed.

The product of teaming facilitation with management is "facilitative management". Where facilitation is the art of helping others to realize what they can do for themselves, and management is the art of "getting things done" through the performance of others; facilitative management is the art of developing each employee into a high performing member of a high performance team. Facilitative management differs from other styles of management in its primary goals and underlying assumptions about people and work. These distinctions are outlined below:

MANAGEMENT STYLE	GOALS	ASSUMPTIONS
AUTHORITARIAN	CONTROL THE WORK AND THE WORKER.	PEOPLE DON'T WANT TO WORK HARD, AND THEY AREN'T SMART.
LAISEZ-FAIRE	AVOID THE WORK AND THE WORKER.	SMART PEOPLE DON'T HAVE TO WORK HARD
PARTICIPATIVE	SHARE CONTROL OF THE WORK WITH THE WORKER.	PEOPLE WANT TO WORK SMARTER --NOT HARDER.
FACILITATIVE	DEVELOP THE WORKER TO CONTROL THE WORK.	PEOPLE WANT TO WORK BOTH HARD AND SMART.

An important distinction between facilitative management and other styles of management is the assumption that people want to work both "hard and smart". This assumption can be extended to include the following five precepts of facilitative management:

1. Under the proper conditions, workers are willing and able to manage their own work--without close supervision.

2. The self-selection of work, by workers committed to the task, is a viable alternative to the assignment of tasks by management.

3. Work goals, performance criteria, and product standards, established by the workers who do the work, can be as demanding --if not more so-- than those imposed by management and the customer.

4. Work improvements, developed by the workers who do the work, can be just as effective as improvements developed by management and outside experts.

5. Given the choice, todays worker would prefer to work for a dynamic, high performance organization where teams of people work collaboratively and productively together.

Other distinctions between"traditional" management and facilitative management include: 1) perception, 2) business priorities, and 3) the tasks of management. These distinctions are outlined below:

PERCEPTION

"THE TRADITIONAL MANAGER SEES...	VS.	"THE FACILITATIVE MANAGER SEES...
SUBORDINATES		ADULTS
EMPLOYEES		TEAM MEMBERS
SUPERVISORS		TEAM LEADERS
WORK UNITS		TEAMS
...WHO ALL WORK FOR THE MANAGER."		...WHO ALL WORK WITH THE MANAGER."

As seen above, in the traditional organization subordinates, employees, supervisors and work units all work for the manager. By contrast, in the facilitative organization adults, team members, team leaders, and teams work with the manager.

BUSINESS PRIORITIES

Traditional Management		Facilitative Management
	Rank order	
1. Profits		1. Customer satisfaction
2. Productivity		2. Employee satisfaction
3. Customer satisfaction		3. Reliable suppliers
4. Reliable suppliers		4. Productivity
5. Employee satisfaction		5. Profit
Profit is the "driver"		Profit is the "result"

To stay in business, all profit organizations must keep their customers and employees satisfied, maintain reliable suppliers, keep output high and costs lower (re: productivity), and of course show a profit. However, in the traditional organization profit is the driver -- all other considerations are subordinate to profit and productivity. By contrast, in the facilitative organization profit is seen as the result of good management -- all other considerations are subordinate to customer and employee satisfaction.

TASKS OF MANAGEMENT

Traditional		Facilitative
	Planning Organizing Directing Coordinating Controlling	
Management Approach: 0 control employees 0 control tasks 0 manage by supervision		Management Approach: 0 develop team members 0 delegate tasks 0 manaage by exception
Outcome: depends on the manager		Outcome: depends on teamwork

The tasks of management include planning the work, organizing resources, directing others, coordinating activities, and controlling performance outcomes. Both traditional and facilitative managers share these tasks in common -- only their "approach" differs. The traditional manager approaches these tasks by controlling the work and the worker; assigning tasks and managing by close supervision. By contrast, the facilitative manager works to develop team members to control the work; delegating tasks and managing by exception. In a traditional organization, only the manager is responsible for task outcomes. By contrast, in a facilitative organization task outcomes depend on teamwork, and responsibility is shared by all team members.

The facilitative manager works to develop "high" performance teams" as the central task of management. The characteristics of these teams will be described below, relative to their form, fit, and function in the organization.

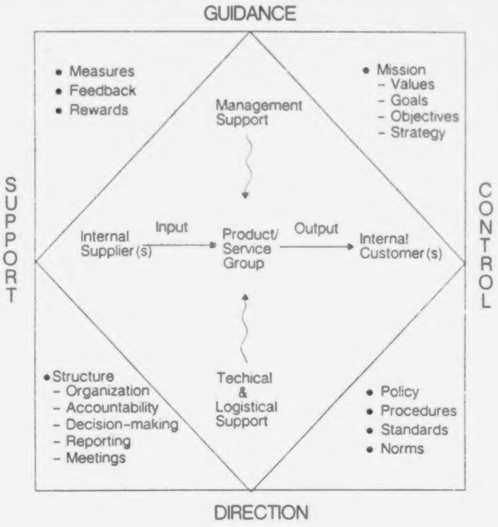
HIGH PERFORMANCE TEAMS

Team Form

The basic "form" of the high performance team is shown in figure 1. This form can be described as a "business-within-a-business".

Figure 1

"a Business within a Business"



Like a business, the high performance team is membered by (internal) customer and supplier group(s), a product/service group, technical, logistical and management support group(s). These groups comprise the human elements of the team. The members of the product/service group perform all the activities required to transform "input" from internal supplier groups into usable "output" for internal customer group(s). Technical, logistical, and management support groups facilitate the activities of the product/service group.

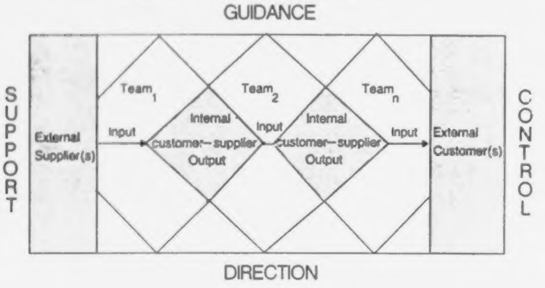
The activities of all these groups must be effectively orchestrated to achieve high performance and to ensure that all human elements function as one, integrated, high performance team. This orchestration is facilitated by four management systems: *guidance*, *direction*, *support*, and *control*. These systems are interdependent -- and must interact with one or more other system(s) -- to effect team integration and performance. The effects of this systems interaction is seen in the institution of various operational elements. Operational elements include *mission*, which provides guidance-control; *policy*, *procedures*, *standards* and *norms*, which provide direction-control; *structure*, which gives support-direction; and *measures feedback* mechanisms, and *rewards*, which provide guidance-support to the team.

Team Fit

Team "fit" within the larger organization is shown in figure 2 as the interdependent relationship between internal/external customers and suppliers. In this scheme, each team is both a supplier and customer to some other team(s) in an interlocking chain of production.

Figure 2

Supplier – Customer Interdependence



Team Function

To function like a business, the team must be "customer-oriented". That is, the most important measure of the team's success is customer satisfaction based on meeting or exceeding customer needs. Other characteristics of effective team functioning include the following:

Goals are developed cooperatively to achieve the best fit between individual, team, and organizational needs.

Decision-making procedures are highly flexible and matched to the issue the team is deciding; different methods are used at different times; consensus is sought for important, complex issues.

Communication is two-way and the open expression of both ideas and feelings is encouraged.

Leadership is shared; the leader works to develop the leadership potential in each member.

Power is equally distributed; influence is based on ability and knowledge.

Cohesion is promoted through high levels of interpersonal inclusion, affection, openness, support, and trust.

Conflict and controversy are seen as necessary to the development of people and ideas; members strive for a collaborative, win-win, resolution.

Problem-prevention is sought through studying the work process, controlling process variations, and anticipating problems -- before they occur.

Responsibility for task and team maintenance is shared by all members.

Accountability is ensured by forming "contracts" to make sure members fulfill their responsibilities to the team.

Norms are developed which express the values beliefs or desires of the majority of members as to what behaviors should or should not occur in the team.

Support-networks are established and maintained with suppliers, customers, managers, and technical experts.

Self-renewal is accomplished through team self-study, problem identification, and open discussion on ways to improve team functioning.

In short, high performance teams are "well managed" groups of people who work collaboratively with their managers, customers, suppliers and other teams in an interlocking chain of production. The involvement of managers, providing guidance, direction, support and control, is essential to the facilitation of high performance. High performance teams presuppose facilitative management involvement.

To be competent in facilitating the development of high performance teams, managers need to acquire expert levels of knowledge in the systems and operational elements of their organization. In addition, managers need to be skilled in working with people at the conceptual, technical and interpersonal level. A full discussion of these "people skills" is beyond the scope of this paper, but an outline of some of these skills is provided below:

FACILITATIVE MANAGEMENT SKILLS

Conceptual Skills

o *Management Philosophy:* an understanding of the evolution of management thought on the issues of "people" and "work" from scientific management and mechanistic views of organizations through modern systems management and organistic views of organizations (c.f., Emery & Trist, 1960; McGregor, 1960; Likert, 1961, 1967; Lawrence & Lorsch, 1969; Porter, et al, 1975; Weisbord, 1976; Hersey & Blanchard, 1977; Kotter, 1978; Jones, 1981; Saskin, 1981).

o *Manager's Role & Functions:* a knowledge of the primary task and maintenance roles needed to facilitate the progressive development and integration of people, technology and systems; instituting operational elements which provide guidance, direction, support and control to the performance of others (for a similar approach, c.f., Lawler, 1986).

o *Designing High Performance Teams:* an understanding of the characteristics of high performance teams relative to form, fit and function in the larger organization; designing work groups, management systems and operational elements to facilitate high performance (For a similar approach, c.f., Donovan, 1986; Stinnett, 1986; Lawler, 1986).

o *Group Development:* an understanding of the progressive stages of group development including: 1) *form*, characterized by dependency and testing behavior; 2) *storm*, characterized by internal conflict; 3) *norm*, characterized by conflict resolution and cohesion; and 4) *perform*, characterized by the development of fully-functional task and maintenance roles (c.f., Tuckman, 1965).

Technical Skills

o *Action Research:* an iterative process for researching an organizational system and taking action to improve that system. The research process includes data gathering using interviews/surveys of system users, analyzing the data, diagnosing the system, giving feedback to the users, developing action-plans to improve the system, making interventions and follow-up (c.f., Argyris, 1970; Lippit & Lippit, 1975; Fordyce & Weil, 1979).

o *Mission Deployment:* an iterative process of "rolling down and up" of organizational values, goals, objectives, strategies, tactics and techniques for the purpose of communicating the economic and ethical mission of the organization and promoting total organizational alignment (for a similar approach, c.f., Baila, 1986).

o *Team-Building:* organizing the formation and facilitating the development of intact work groups, quality circles, task-force teams and integrated teams through the use of experiential training in problem solving, decision-making, participative leadership and group dynamics (c.f., Johnson & Johnson, 1982; Beckhard, 1972; Zand, 1974).

o *Conflict Management:* the ability to resolve interpersonal conflict using different strategies including: power, accommodation, avoidance, compromise and collaboration; recognizing situations when each strategy is most appropriate (c.f., Thomas & Kilman, 1974; Thomas, 1976).

o *Consensual Decision-Making:* using group consensus to decide important, complex issues; involving all those affected by the consequences of that decision in reaching consensus (c.f., Johnson & Johnson, 1982).

o *Delegation:* the progressive development of team members to assume higher levels of responsibility based on "readiness" to perform; developing the worker to control the work (c.f., Rosenbaum, 1982).

o *Reinforcing Performance:* using tangible and intangible rewards and recognition to reinforce improved performance based on measurable performance gains (c.f., Rosenbaum, 1982; Doyle, 1983; Lawler, 1986).

o *Managing Individual Difference:* the ability to recognize the unique qualities of individual team members and channeling these qualities into productive teamwork (c.f., Rosenbaum, 1982; Johnson & Johnson, 1982).

o *Facilitating Improvement Projects:* helping the team to focus on studying its work process, controlling process variations and improving process outcomes (re: quality, productivity, customer satisfaction); developing the problem-solving and project management skills of team members.

Interpersonal Skills

o *Observing Team Dynamics:* the ability to discriminate between the "content" and "process" of teamwork -- and focusing on the process by which a team works. Process variables include: participation, influence, cooperation, competition, decision-making procedures, feelings and norms. The process or dynamics by which a team works is the most critical factor in team development and performance (c.f., Bradford, 1953, 1976; Hanson, 1972; Johnson & Johnson, 1982).

o *Active Listening:* the ability to listen attentively -- not only for the content and meaning of a message -- but to the feelings of the sender, as well. The active listener facilitates the open expression of both ideas and feelings from the sender (c.f., Rosenbaum, 1982).

o *Giving Feedback:* the ability to communicate our feelings and perceptions about another person(s) behavior in a specific, descriptive, nonjudgemental way, which allows the recipient(s) of our feedback the freedom to choose whether to modify their behavior (c.f., Hanson, 1975).

The facilitative manager applies these skills in his/her organization to progressively develop individuals, work groups, operational elements and systems into an integrated network of high performance teams.

IMPLICATIONS FOR QUALITY CIRCLES

Premise:

1. In business the only imperative is performance.
2. Quality circles are in business.

Conclusion:

Quality circles must perform to stay in business.

Quality circles will succeed in business when they help management to develop each employee into a high performing member of a high performance team. That is, the goal of quality circles should be to promote high performance work teams. As an operational sub-element, quality circle "meetings" (c.f., figure 1) help provide support and direction to the structure of high performance teams. High performance teams, as presented here, must include quality circles. However, quality circles represent only one of many operational elements and sub-elements needed to facilitate high performance teams. The remaining elements must be supplied by management involvement. To become involved, managers need to shift from traditional approaches to the management of people and work to a more facilitative approach which supports increased employee involvement in traditional management roles and functions. Facilitative management is posited as the "bridge" between quality circles and high performance teams. It is hoped that the concept and precepts of facilitative management will serve as a guide to managers and circle facilitators whose common goal is high performance. It is further hoped that managers may begin to think and act more like facilitators, and facilitators think and act more like managers. Perhaps, working together, we will build the teams that build the organization.

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BIOGRAPHY

Constantine (aka, Gus) is currently assigned as Program Developer for Productivity & Performance Enhancement Systems at Martin Marietta, Michoud Aerospace, New Orleans, Louisiana. Constantine has over six years experience in quality circles program development, implementation, training, facilitation and evaluation. As a Program Developer, Constantine works to integrate people, technology and systems to enhance productivity at Michoud Aerospace and NASA.

Constantine received his M.A. in personnel psychology from Teachers College, Columbia University in 1979 and his B.A. in psychology from Rutgers University in 1977. He has been employed by Martin Marietta, Michoud Aerospace for seven years

Employee Involvement at Mercury Marine

Ann L. Seyfert
Personnel Manager, Casting Plants, Mercury Marine, Division of Brunswick Corporation,
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When people at Mercury Marine talk about employee involvement, they are generally referencing an umbrella-like concept under which many activities are included. Mercury Marine has approximately twenty types of group activities, which will be grouped into six categories for this presentation: picnic and sporting activities, try-an-outboard, just-in-time study groups, quest teams, customer focus, and employee assistance. This session will discuss past, present, and future activities under each group as well as provide insight into how Mercury Marine approaches employee involvement.

Mercury Marine's step into employee involvement programs began in late 1977. Departmental meetings were utilized to research quality problems. Late in 1978, Mercury formalized their employee involvement in the Fond du Lac, Wisconsin plants by implementing Quality Circles.

Quality Circles became more pronounced in 1979. Employees were hesitant to join and tackle quality problems. A traditional labor/management philosophy existed with the "us against them" thinking. The union agreed to take a neutral position concerning circles in an effort to overcome the mistrust between union and management.

Quality Circles became MerCircles (Mercury Employee Recognition Circles). After five years, a new company president and inroads into the traditional labor/management attitudes made possible the union's involvement in the MerCircle efforts. The name was changed to Quest Teams to reflect the process of change Mercury was undergoing with QUEST - Quality by United Effort Secures Tomorrow.

Quest Teams have expanded into other employee involvement programs. Just-in-time study groups, Customer Focus (boat packages equipped and evaluated by employees), and Try-an-Outboard (employees evaluating 25 HP outboards and down).

Employee involvement programs continue to expand. The nursing staff at Mercury has moved aggressively into the company-sponsored wellness program. Exercise programs, smoking cessation and health screenings encourage employees to be healthier and more productive.

Taking an interest in the employee and his/her problems and the affect of those problems at the workplace evolved into the employee assistance program. Employees have a means of seeking help for alcohol or drug-related problems, marital problems and mental health problems.

Leisure activities are sponsored by Mercury. Bowling, pool, volleyball, golf and softball leagues involve many employees. A joint company-union picnic has been held for the past three years and has been a major success.

Employees are truly involved in all of these areas. They play a vital role in making these programs a success.

Biographical Information

Frank Bush, is a Consumer Affairs Specialist in the Administrative area.

Stan Develice, is an Assembler Technician I in the Manufacturing plant.

Paula Draves, is a Personnel Secretary in the Casting plants.

Linda Faris, is an Industrial Nurse in the Manufacturing plant.

Todd Goebel, is an Industrial Engineer in the Manufacturing plant.

Phil Perry, is a Maintenance Electrician in the Manufacturing plant.

Ann Seyfert, is a Personnel Manager in the Casting plants.

Orv Sieger, is an Assembler Technician I in the Manufacturing plant.

Wayne Steffen, is a Tool & Cutter Grinder in the Manufacturing plant.

Derald Sommers, is a Machinist V in the Manufacturing plant.

Quality Circles Behind Bars in Missouri

John R. Werst, David C. Miller and R.C. Miller

State of Missouri

Office of Administration

EMPLOYEE
Quality
Circles
INVOLVEMENT

The Missouri Eastern Correctional Center is a medium security prison nestled in the rolling hills along the Meremec River, just south of St. Louis. Missouri Eastern is setting the pace in terms of its innovative approach to human resource management. Quality Circles were introduced among the inmate population over one year ago and the results have been nothing less than impressive.

Managers developed a vision for this project after learning about the concept from R. C. Miller, Director of Employee Relation, Office of Administration. Miller's experience in the quality circle approach to employee involvement while serving as Productivity Coordinator for the State's largest departmental Q. C. program served him in convincing prison administrators about the potential for successful problem resolution by inmates themselves. "The traditional top-down management approach has always worked, but never worked well" says Miller who convinced the institutional superintendents that an existing forum for inmate grievances known as the Inmate Council could be structured to provide a method for constructive problem solving rather remaining a gripe session. The process was re-structured in such a way that residents would identify institutional problems, develop solutions, and present recommendations directly to top administrators for consideration.

Deciding the best way to select and rotate team members posed a significant challenge to program developers: The steps that might be considered part of a "typical" quality circle project start-up were confounded by a dangerously complex prison environment. These complexities likewise made team leader selection, facilitation and training an extremely sensitive endeavor.

Prison administrators, inmates and program developers alike quickly developed a set of expectations about their goals for the program. Surprisingly both administrators and inmates saw this effort as a way to reduce the negative tensions that exist between management and inmates. Management views the program as a way to better control and interact with the demands of a increasingly stressed prison population. Inmates see the program as a way to access the administration on issues of relevance to their personal safety and quality of life. Program developers see the program as a challenge with respect to the development of new training approaches in individualized prescriptive teaching and handling an extremely alienated population.

Introduction

MECC is a medium security prison located amidst the rolling hills south of St. Louis along the Meramec River. The newest of Missouri's penal institutions, MECC began receiving inmates in September of 1981 and is recognized as an innovate, state-of-the-art facility. Viewing MECC from a distance, one might confuse the institution with a community college because of its attractive modern buildings and spacious, landscaped areas. That brief impression would soon fade seeing razor woven wire atop the double fenced perimeter, control towers, and drab prison fatiques.

With all of its relative innovations, MECC is still a prison. Due to its institutional mission, "to provide a secure, rehabilitative environment for the protection and development of public welfare," MECC maintains order with structure, rules, and discipline.

The challenges facing the institution, as with most prisons, are immense. The institution was originally built to house 512 inmates. There are over 1080 as of this date. There are roughly 260 full time employees, which, when divided into three shifts makes the staff to inmate ratio a real security concern for both inmates and staff. With dangerous overcrowding becoming an ever increasing problem for prison administators, other issues such as fiscal constraint, staff turnover and public apathy only exacerbate the problems inherent in such an environment.

Apathy, frustration and despair can only breed poor morale and antisocial behavior. In an environment where 'normal' socialization patterns are not present, even routine interactive processes take on extreme importance to prison inmates. Admittedly, prison administrators are not known for their participatory management philosophy. How could a quality circle program survive, let alone produce any meaningful contributions behind bars?

The Pilot Project at MECC

Staff from Missouri's Productivity Analysis Section from the State Office of Administration and prison administators developed a novel idea; train inmates in quality circle techniques and let them attempt to solve problems affecting their environment and quality of life. The idea was born out of a belief that if quality circles could be successfully implanted in one of the most hostile organizational cultures, a penal institution, it could surely survive in organizations where 'negative culture' is blamed for hesitancy in program implementation. Program developers felt that an existing forum for inmate grievances known as the "Inmate Council" could be converted into a quality circle. The quality circle, it was proposed, would solve problems in a constructive, systematic manner rather than simply functioning as a gripe session as in the past. 'Normal' issues surrounding program implementation were complicated by a dangerously complex prison environment. These complexities made the selection of team members and leaders an extremely sensitive endeavor. The inmate 'super circle', as they were called, were given wide latitude to select and develop solutions on institution-wide issues. The process set forth that quality circle recommendations would be presented directly to upper management for consideration.

Circle Goals Established

One of the early concerns of program developers was that inmates would attempt to manipulate the process, thereby discrediting the effort. In the 3 day training session conducted for quality circle participants, program developers stressed that the process must be viewed as "win-win" by inmates and prison administrators alike. Goals of the quality circle must, it was stated, be in concert with the goals and objectives of management. Within a week after their training, the inmate circle had established their goal: "The reduction of prison violence through the resolution of institution-wide problems." Program developers were pleasantly surprised the goal fit their criteria of being results oriented, measurable, clearly understood, and, most importantly, in-line with organizational objections.

Successfully Completed Projects:

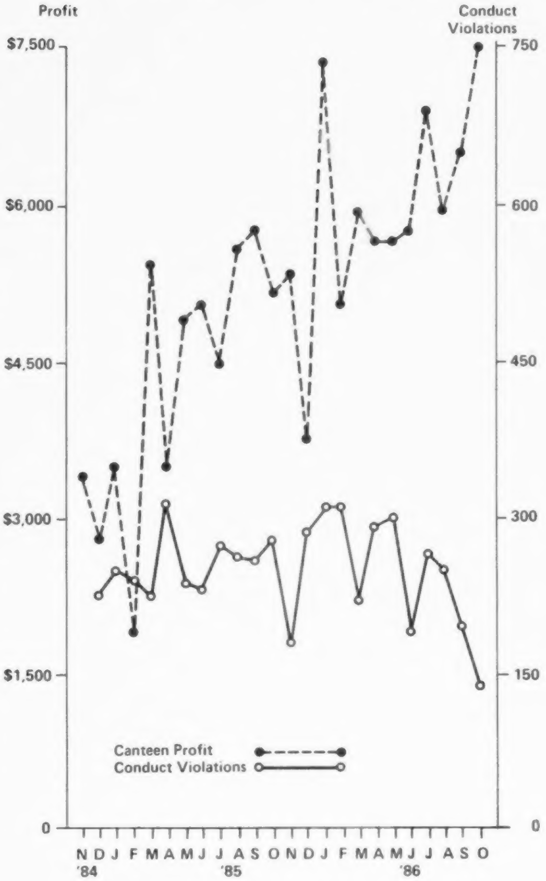
The first project undertaken by the MECC 'Super Circle' dealt with an inadequate money supply for residents at MECC. The causes for this problem were numerous: inordinately low pay scales for inmate labor, an inefficient coupon book system that limited inmate's ability to make purchases at will, and excessive time delays from the time credits were made on resident accounts to when the funds could be expended in the prison canteen. Team members were able to document that when funds were not available for use in the prison's canteens, the number of conduct violations in the institution rose. Conversely, data gathered by circle members indicated that during those months when canteen purchases were high a corresponding reduction in incidence was observed.

Drawing upon control data made available by prison officials, the MECC quality circle was able to document the impact of the problem. Ample data was presented to indicate a positive correlation between the money supply in the institution and conduct violations. Management was presented with statistical data indicating the number of inmate conduct violations and protective custody requests due to personal debt, as these related to the amount of funds available in the institution. During those times when canteen profits were low, corresponding increases in total conduct violations and requests for protective custody were observed.

Team members also documented the amount of monies spent by the institution for weekly supplies for residents in the housing unit and demonstrated through their data analysis that these expenditures were considerably more than necessary due to the inability of inmates to purchase personal effects for themselves through the canteen. In effect, the prison policy was not only creating more conduct violations, it was costing the state more in expenditures for personal effects than necessary.

As a solution, team members recommended a money voucher system be implemented so residents could receive money immediately to spend in the canteen. The result of the money voucher system were dramatic. (See Table). The amount of profit realized by the prison canteen rose significantly upon the implementation of the money voucher system. Conduct violations have experienced a decline in the past three months of the survey. Benefits of the voucher system were accrued to the entire prison population due to the fact that canteen profits are used for the prison's educational, recreational and religious programs. Prison administrators were amazed by the morale boost that was evident as a result of the voucher system. The voucher system is in plact to stay at MECC. Other prison institutions in Missouri are taking a closer look at their policy options in this regard.

CANTEEN PROFIT MARGIN & TOTAL CONDUCT VIOLATIONS
NOVEMBER, 1984 THRU OCTOBER, 1986



Follow-up data gathered on the voucher system project at MECC indicated a strong negative correlation between expendable funds (reflected in broken line-canteen profit) and the number of documented conduct violations (solid line). Consistently declining conduct violations for the past three months is attributed, according to quality circle members, to their recommendations to implement the voucher system.

Other Projects:

Team members identified a major concern over the increased volume of visitors seeking admittance to the institution's visiting room. Procedures governing the visitor's room has not been modified to accommodate an increasing population and the higher number of visitors. The lack of updated visitor procedures led to complaints from visitors, congestion, excessive noise levels, frustrated inmates and staff, and conduct violations. After documenting the impact of the problem, circle members proposed new visiting room procedures covering processing procedures and a visitor file card system. A new processing desk was recommended for the visitors room to expedite the processing of visitors a modernized metal detection device was also suggested for consideration. The result of the solution was a reduction in the amount of waiting time from approximately one hour down to 20 minutes.

Acting upon the suggestion of the Superintendent, circle members also chose to work on a major project concerning the Housing Unit Rules and Regulations Handbook. There had been no revision of the handbook in recent years and many policies were in need of modification. Ambiguities and inconsistencies were present throughout and only added to the sense of frustration among inmates. Team members worked through the 18 page rules and regulation handbook, analyzing every aspect of resident life to determine if better regulations or wording could be developed to resolve problem areas. The revision of the Resident Handbook became a six month project that, when completed, was approved by the Superintendent and upper management and adopted institution wide . . . Now that's an interesting twist in prison administration! . . . inmates developing their own regulations.

Problems/Solutions

Although nearly all the completed projects granted management approval, the MECC's experimental Quality Circle project was not without difficulties. At the date of this writing there are issues that still present significant challenges to the programs continued success.

The selection of team members posed one of the earliest challenges in the circle project. The selection process utilized by the existing inmate council called for elected wing representatives to serve a term in the council. This "representative" principle was used in creating the circle, meaning that circle members were actually elected representatives of their respective housing wings. It became apparent that certain wing representatives were not well suited to serve on the team. Some were perceived as serving a dual rôle as problem solver and 'ventilator' for their particular housing units. The flaw in this system of circle membership became apparant when one member of the group exhibited antagonistic behavior and was asked to resign from the group.

The issue of team membership selection was handled through procedural changes that permitted encumbent team members the opportunity to explain the concept to prospective members and to reach consensus on new members prior to their involvement in the circle activities. Procedures were also established as part of the quality circle 'bylaws' that provided mechanisms for the removal of members who consistently missed meetings or exhibited disruptive behavior.

As stated earlier, the MECC super circle established goals that were in line with the organizational objectives of management. Restated, the goal of "reducing prison violence through the resolution of institution-wide problems" allowed a great deal of flexibility with regard to the problems selected. However, as circle members began working on issues requiring a number of weeks to complete, many of the "fix it" issues went unresolved. This created some discontent among circle members who wanted to see immediate actions on issues discussed. Not only were circle members anxious to see resolution of issues identified in lengthy brainstorming sessions, large segments of the general population developed expectations of immediate results from the circle. Prison administrators determined that periodic review of "fix it" issues was needed on an interim basis. Management met with team members and made administrative decisions on a number of 'quality of life' issues brought to their attention. These ranged from opening the library on weekends and allowing Christmas food packages to the placement of picnic tables and posting of laundry schedules.

Another unanticipated problem area related to the negative reactions of prison staff to the inmate quality circle problem solving activities. An undercurrent of animosity seemed to develop over the fact prison inmates had developed better access to the prison superintendent than did most staff. Furthermore, the negative reactions engendered when team members began data gathering activities were completely underestimated. Staff members were not prepared to have to provide circle members with information they thought should be considered confidential to inmates. They perceived inmates using the opportunity to demonstrate their "power" over prison guards.

The issue of staff alienation was a factor that program developers failed to assess during planning stages. The problem could have been avoided with a detailed orientation about program objectives, parameters, and process for staff members. It also became necessary to insure that weekly quality circle meeting minutes were explicit in terms of their explanation of the issues being considered by team members. A number of issues were carefully reworded or omitted from subsequent meeting minutes.

In Conclusion

The introduction of an employee involvement process in even the most 'typical' organization does not occur without significant obstacles. Issues affecting the successful implementation of a quality circle program are varied; team member and leader selection, the establishment of meaningful goals, unreasonable expectations for immediate results, middle management resistance, or burnout. While these obstacles may appear insurmountable during the process, they can be overcome. It requires proper planning and the perceptive that efforts in this regard are part of a process —not a programmatic quick fix.

Biography

John R. Werst (Author) B.A., M.P.A. is a recent graudate from the University of Missouri at Columbia. He has worked with Missouri's Productivity Analysis Section for the past 2½ years coordinating the state-wide employee involvement program.

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How One School District Benefits From Quality Circles

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Quality Circles is a unique motivational activity that school systems will probably want to utilize in the decades to come. The concept of employee involvement through quality circles is important in any work environment but particularly important in education, since the workers of the future are sitting in America's classrooms today.

South Huntington Schools, Huntington Station, Long Island, New York has had a successful district-wide program since 1982, and includes both elementary and secondary instructional and non-instructional staff in its quality circle program.

Outline

- Overview of Quality Circles in Education
- "An Approach to Participative Management"
- Introduction
- South Huntington Quality Circle Programs
- Quality Circles
  - Guidance Counselors
  - Clerical Circle
  - Transportation Department
  - Cafeteria
  - Fifth Grade Teachers
  - Present Circles
- People and the Problems
- Suggested Guidelines
- Conclusion

Overview

During the past few years, an avalanche of negativism and criticism has fallen on the nation's schools and the present state of education in America. The Quality Circle process is an excellent vehicle with which managers and school administrators can lead their employees into a more productive era. The Quality Circle movement, well entrenched in the business and industrial communities is virtually unheard of throughout the educational community in the United States. A few innovative school districts have had pilot programs, and tried to implement circles, but few have sustained their programs to full implementation.

A number of educational leaders have made Quality Circle presentations at national educational conferences where they have discussed the concept of employee involvement in schools. However, the concept as a means of increasing productivity, while involving school employees in changing the image of education, has not yet found its way into the schools.

In many ways, this is unfortunate, since many educators have responded to "Nation At Risk," the report of the National Commission on Excellence in Education, by rushing to establish plans for excellence by increasing requirements, extending time-on-task, and revising evaluation criteria. Reacting in this manner, by simply increasing present procedures becomes a haphazard, stop-gap approach which will in and of itself become part of the problem.

In South Huntington we have found that the key to achieving educational excellence lies with the people in the organization. Quality Circles affords us that opportunity by involving the "**people**" in the organization.

An Approach To Participative Management

Managing through employee involvement had moved into our schools. Prior to the first meeting of each circle, a survey was done to determine the attitudes concerning the workplace. Each person was asked to complete an attitude survey before their involvement with

Quality Circles, and then again at the conclusion of the school year. The results of the pre-survey indicated the following general trends: The **Job** itself; that is the activities of the workplace - ranged in the average level of acceptance, with little or no problems related to the actual work. The **Supervisors** - rated above average in their relationship to the employees, while the **Work Group** scored higher on the post survey than on the preliminary form. **The organization** and its relationship to its employees scored lowest on both surveys, while communications overall (between managers and co-workers) seemed to run average to slightly above. The pre and post Job-Reaction Survey of the school employees revealed that employees were not as positive about the organization as they were about the work, unit, supervisors or the actual job itself.

In the schools, as in the private sector, workers are more self-aware and self-oriented than they were in the past. They are no longer satisfied with the survival instinct, the old motivators are not working. A day's pay for a day's work was of prime importance to the depression generation and provided the needed motivation to do a good job. According to Yankelovich, "...A new breed of Americans, born out of the social movements of the 60's...holds a set of values and beliefs so markedly different from the traditional outlook that they promise to transform the character of work in America in the 80's."[1]

Modern workers have grown up in an affluent society. They have not known the deprivation of previous generations. They need to work and earn money, they want security but, they also want more. Perhaps, the Quality Circle program, unlike the MBO, or the Zero-defects or the Scanlon Plan will help to fulfill those self-actualization needs and not just become another temporary organization panacea.

Management is the key. Without top management support, the program of Quality Circles, or any other QWL program, never becomes a part of the fabric of the organization. For practical purposes, it must be assumed that the top level management--at least the Superintendent or Chief Executive Officer--understands, supports and encourages this participative program. In many organizations, the Chief Executive Officer or his designees are members of the Steering Committee. The degree of acceptance of a Quality Circle program may vary, in accordance with the outlook and the philosophical orientation of an organization's managers. Many managers and administrators are unaware of the concerns and needs of their employees, and seldom seek this information.

"It is not uncommon during the early stages of a circle development or any participative-management program to find that the organization has a "Theory Y" top management (superintendent level), a mixture of "Theory Y," and "Theory X" middle managers (building principals, and supervisors) and a very strong "Theory X" first-line supervisory team (head teachers, Department Chairman, Directors)."[2] Middle Management and first-line supervisors are often resistant because they feel the threat of losing their decision-making authority. Some managers feel that Quality Circles is a waste of time, or they fail to see the rewards in it for them. Expression of these attitudes can have a decidedly negative impact on any participative program. It is often heard that "middle management is magic," it seems they can wave the imaginary "magic wand" and a program will succeed or fail. In the best seller, "In Search of Excellence," authors Peters and Waterman state "...quality circles are only the last, in a long line of tools, that can either be very helpful, or can simply serve as a smoke screen while management continues to get away with not doing its job of real people involvement."[3]

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[1] Daniel Yankelovich, "The New Psychological Contracts at Work", Psychology Today, May, 1978

[2] Perry Pascarella, "Quality Circles-Just Another Management Headache?", Industry Week, June 28, 1982, p.1

[3] T. Peters and R. Waterman, Jr., "In Search of Excellence," Warner Books, NY,NY 1982

Since it is common to find management resistance to most employee involvement programs, the most effective way to solve this potential resistance problem is to prevent it from the outset, by involving all(employees) in all introductory presentations and early phases of implementation.

Introduction

One of the long range goals identified by our Board of Education was to improve upon the existing quality of education by increasing the staff's options and opportunities for professional growth.

In line with the implementation of activities designed to accomplish this goal, the Quality Circle or Quality in Education Study Teams (Q.U.E.S.T.) was introduced to the staff and administrators of South Huntington Schools, Long Island, New York.

The new Superintendent, Dr. Daniel Domenech, selected a member of the staff, Mrs. Joan Wilson, to receive information and Quality Circle training and thereafter begin working to establish the first district-wide educational Quality Circles program in the New York Metropolitan area. All staff was invited to attend the orientation and training programs.

Three (Q.U.E.S.T.) Quality Circle groups resulted from the initial Quality Circle training program. The high school guidance staff, the elementary reading teachers and a group of District Office secretaries began meeting.

Our first official Quality Circle was held on November 3, 1982 in the Walt Whitman High School Guidance Department. The circle heard an overview and discussion on the concepts of Quality Circles and procedures for brainstorming. The ten members attending concluded the meeting with each guidance counselor being asked to think of items for a practice brainstorming exercise.

Quality Circles had come to our school district. Little did we realize the intensity or the magnitude of what we had begun. Today the Quality Circle program is "**alive and thriving**" in South Huntington Schools.

A successful pioneer program was launched when the South Huntington Schools, Long Island, New York, began its program that fall of 1982. We held our first training session for interested staff members. Five people emerged as circle leaders, and the new term "**Quality Circle**" became a reality. Our first group was started following a district-wide introduction given on the annual Superintendent's Conference Day, November 2, 1982.

Many of the difficulties encountered whenever a new program is introduced, were compounded in this program because little or no information was available to use as a model. Quality Circle use in school districts was unheard of in the East. A few schools had tried some of the techniques in the midwest, but, none at all had district-wide programs. In spite of the lack of a road map, we proceeded with the assistance of the business community. Grumman, Hazeltine, Estee Lauder and Sperry gave us immeasurable assistance in establishing our program. All of these corporations had successful Quality Circle programs, and each was affiliated with the International Association of Quality Circles; an organization whose goals are to promote Quality Circle programs and to lend support to the facilitators and circle leaders of the various organizations.

South Huntington Quality Circle Programs

It is important to take some time to explore the actual concept of a Quality Circle; how can it help and what it is designed to do? A Quality Circle is a group of employees doing the same or similar work, in the same department or work area, who regularly and voluntarily meet (usually once a week on company time) to discuss problems associated with their jobs and work life. The circle's objective is to identify the real cause of a problem and to discover ways to eliminate that problem. In the United States, Quality Circles were formed in 1974 with little over 300 circles functioning.

In 1986, the number has risen to several thousand. While forming, many companies were deluged with inquiries from other companies wanting to form their own circles. We, in South Huntington Schools, have experienced similar inquiries and calls, asking us for information and the chance to visit our schools to observe a Quality Circle in operation. Our **"Guidance (Circle) Counselors"** were eager to have visitors see their Quality Circle operating so successfully. It is important to note that the **entire** Guidance staff volunteered to participate in the Quality Circle and worked diligently each week on their identified problem. A management presentation was held for the administration (Principals) of the Walt Whitman Senior High School and the District Supervisor of Business. The presentation was reviewed by administration and approved for immediate implementation. The guidance department believed in the process! It was not simply a "management tool" to prod workers or another motivational fad. It actually worked!

As mentioned earlier, the President's Commission on Education challenged educators, administrators, colleges and universities to reverse the "downslide" of mediocrity in education and invest in our own future. Commitment is needed if we are to develop our only remaining "natural resource," the "enlightened mind." If we are to become a nation dependent upon "communications," we must learn to communicate.

Quality Circles offers a concept to help schools bring people together so that they will become effective communicators and efficient workers able to transmit, interpret and relate to each other. Accordingly, there is a real possibility for improvement in human relationships between administrators and staff when management commits itself to improving the psychological **health** of the educational work life. Reducing the barriers between administration and teacher to teacher is the first step. As one of our Guidance Counselors put it, "This is the best thing that has happened in the 24 years I've been here. Finally, we are working together! I'm sorry it's almost time for me to retire."

Other circles got underway in our district. Among the first was a **Clerical Circle**, secretaries from the District Office, began to meet and work together to identify their "work related concerns." It was interesting to note that each felt that there were little or no problems when they began meeting. They surprised themselves when the **list** continued to grow at the initial brainstorming exercise. After careful consideration and clarification, the final problem was identified and a cause determined. Each circle member took a task, researched, interviewed, collected and analyzed data to support their position. Preparation for the management presentation brought several "dress rehearsals," nervous excitement, charts, Pareto, graphs and a glass of water for any unforeseen throat impediments by the presenters. On July 18th, a letter was delivered to the Circle Leader telling her how pleased the management was with the presentation, and yes, the problem would be solved. The district would advertise and hire a part-time person to cover the relief time on the switchboard. Smiles, "thank you's," and happy faces greeted the new school year.

The South Huntington Public School District began a Quality Circle with their **Transportation Department** in December 1984. The most immediate question of whether a concept used in industry could be adapted for school systems had been answered with a resounding "yes" by the success of the initial Quality Circles in South Huntington Schools. The Quality Circle for the Transportation Department, inspired by the success experienced by the Quality Circles in other departments in the district proved that Quality Circles could work throughout the school system.

The problems addressed by Quality Circles are not restricted to quality but may be in any area that influences the output of the work unit. This would include issues regarding safety, job structure, process flow, reporting requirements, and control mechanisms.

THE QUALITY CIRCLE IN SOUTH HUNTINGTON'S TRANSPORTATION DEPARTMENT RAISED THE MORALE OF THE BUS DRIVERS WHO FELT SOMEWHAT ISOLATED FROM THE DISTRICT DUE TO THEIR DIFFERENT SCHEDULES AND GEOGRAPHIC LOCATION. MORE SPECIFICALLY, THE TRANSPORTATION QUALITY CIRCLE IDENTIFIED APPROXIMATELY 12 ISSUES WHICH THEY BRAINSTORMED, TWO OF WHICH INCLUDE BUS WARM-UP AND ROUTING PROBLEMS. OBVIOUSLY, WITH IMPROVED COMMUNICATION, GREATER EMPLOYEE INVOLVEMENT, INCREASED OPPORTUNITY FOR INDIVIDUAL GROWTH, A SENSE OF OWNERSHIP AND CONTROL OF THE WORK ENVIRONMENT, THE EMPLOYEES WOULD HAVE A POSITIVE IMPACT ON THE TRANSPORTATION OF SCHOOL CHILDREN IN SOUTH HUNTINGTON. NOT ONLY DOES THE CONCEPT OF QUALITY CIRCLES ENCOURAGE LONG TERM RETENTION OF BUS DRIVERS, BUT IT ALSO CONTRIBUTES TO THE SAFETY OF THE STUDENTS.

THE CAFETERIA QUALITY CIRCLE HAS BEEN IN OPERATION FOR THREE YEARS. THIS IS AN EXTREMELY ENTHUSIASTIC GROUP. THEY HAVE MADE SEVERAL SUCCESSFUL PRESENTATIONS. THE LAST PRESENTATION TOPIC INVOLVED THE "LACK OF EFFICIENT OPERATION OF THE DISTRICT KITCHENS." (SEE CHART A) MENU COMPARISONS WERE MADE AS PART OF THEIR STUDY. (SEE CHART B) THIS GROUP OF TWELVE FOOD SERVICE WORKERS HAS MADE PRESENTATIONS TO THE BOARD OF EDUCATION OF SOUTH HUNTINGTON AND TO THE LONG ISLAND METRO CHAPTER OF I.A.Q.C.

CHART A

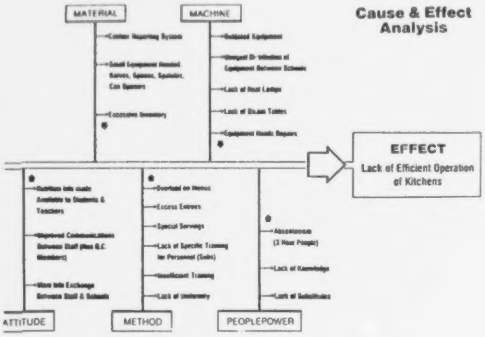
Cause & Effect Analysis
MATERIAL
Central Reporting System
Small Equipment Needed Knives, Spoons, Spatulas, Can Openers
Excessive Inventory
MACHINE
Outdated Equipment
Unequal Distribution of Equipment Between Schools
Lack of Heat Lamps
Lack of Steam Tables
Equipment Needs Repairs
EFFECT
Lack of Efficient Operation of Kitchens
Nutrition Info made Available to Students & Teachers
Improved Communications Between Staff (Non Q.C. Members)
More Info Exchange Between Staff & Schools
Overload on Menus
Excess Entrees
Special Servings
Lack of Specific Training for Personnel (Subs)
Insufficient Training
Lack of Uniformity
Absenteeism (3 Hour People)
Lack of Knowledge
Lack of Substitutes
ATTITUDE
METHOD
PEOPLEPOWER

CHART B

Daily Menu Comparison

E = Elementary
S = Secondary

	North Babylon	Deer Park	Kings Park	Half Hollow	Elwood	South Huntington
No. Entrees	3	2	3	E-4 S-12	2	E-5 S-13
No. Desserts	1	1	1	E-3 Fruit S-0	4	6
Choice of Salad	0	0	0	0	2	2
Special Servings	0	0	0	0	0	YES
Price of Complete Type A Lunch	E-.90 S-.95	E-.85 S-.95	E-1.00 S-1.05	E-.90 S-ALA CARTE	E-.85 S-.95	E-.85 S-.95

OUR FIFTH GRADE TEACHERS AT OAKWOOD ELEMENTARY SCHOOL FOUND IT IMPOSSIBLE TO RETURN IMPORTANT CALLS TO PARENTS BECAUSE OF OVERLOAD ON THE FIRST FLOOR SCHOOL MAIN OFFICE PHONE. THEY SURVEYED TO SEE HOW GREAT THE PROBLEM WAS FOR THE ENTIRE SECOND FLOOR. SEE SURVEY BELOW. (CHART C)

CHART C
FIFTH GRADE TEACHERS SURVEY

1. Have you ever been requested to call a parent at specific hours during the school day? 8 Yes
2. Has the conference room phone been unavailable when you needed it? 8 Yes
3. Have you ever had the need to respond to a parental call just prior to/or during student arrival? 8 Yes
4. Have you ever had to return a call because information requested by parent was not at hand (grade book, conf. form, report card, etc.)? 8 Yes
5. Have you ever had the need to contact parents of students other than homeroom due to cooperative teaching and/or mainstreaming programs? 6 Yes 2 No response
6. Have you had a need for privacy in phone calls? 8 Yes
7. Have you ever been inconvenienced due to the distance being traveled to the 1st floor phone from the 2nd floor during preparation periods? 8 Yes
8. Have you noted a need to make more parental phone calls at conference and report card periods? 8 Yes
9. Have you had the need to make immediate verbal contact with a parent concerning student progress? 6 Yes 1 No 1 No respon
10. Have you found that there is increased verbal contact with parents in recent years? 7 Yes 1 No response
11. At particular times of the day, is it difficult to have access to the phone? /7 Yes 1 NR /Arrival/________/9:00 A.M. /________/lunch//________/Primary dismissal/ (Please check where appropriate)
12. Would you feel more comfortable having a phone at hand at times of medical emergency for student or staff? 7 Yes 1 No response
13. Do you feel there is a need for an upstairs phone? 8 Yes
14. Additional comments welcome
    1. Who is the genius who thought of this idea? It gets my four stars ****.
    2. This would be of major benefit to the 5th and 6th grades. I am highly in favor of this idea.
    3. We could also be able to make calls during bathroom break and snacktime because of the proximity.
    4. As a special education teacher, there is a great need for frequent parental contact as well as frequent communication with special ed administration at the district office.

PRESENT CIRCLES IN THE SOUTH HUNTINGTON SCHOOLS

(1) **WALT WHITMAN HIGH SCHOOL** - FIVE CIRCLES WITH 6-8 CIRCLE MEMBERS EACH. FOUR CIRCLES HAVE MADE AT LEAST ONE PRESENTATION, ONE CIRCLE IS TWO MONTHS OLD AND HAS NOT PRESENTED A PRESENTATION. ALL ARE TEACHER CIRCLES, ALL MEET ON SCHOOL TIME.

(2) **STIMSON JUNIOR HIGH SCHOOL** - ONE CIRCLE OF SEVEN MEMBERS. DEPARTMENT CHAIRMEN MEET REGULARLY, THEY HAVE MADE ONE MANAGEMENT PRESENTATION. MEETINGS ARE ON SCHOOL TIME.

(3) **ELEMENTARY SCHOOLS**

OAKWOOD - ALL FIFTH GRADE TEACHERS IN THIS ELEMENTARY SCHOOL QUALITY CIRCLE MEET AT 12:50 ON WEDNESDAYS. THEY HAVE MADE TWO SUCCESSFUL PRESENTATIONS.

BIRCHWOOD - SPECIAL AREA TEACHERS - A NEW QUALITY CIRCLE BEGAN IN JANUARY 1987, WITHIN THE SCHOOL DAY.

(4) **DISTRICT-WIDE**

A. **ELEMENTARY PRINCIPALS** - FIVE MEMBERS MEET ALTERNATING WEDNESDAYS - STARTED NOVEMBER, 1986, MEETING AT 9:00 A.M. TO 10:00 A.M.

B. **SPEECH THERAPISTS** - MEET REGULARLY ON THURSDAYS AT 1:30 P.M.

C. **CHILDRENS GROUP** - JUST FORMED - USES QUALITY CIRCLE TECHNIQUES. TEACHER TRAINED IN QUALITY CIRCLES IS TRAINING STUDENTS (STUDENT COUNCIL).

D. **CAFETERIA** QUALITY CIRCLE IN OPERATION FOR SEVERAL YEARS. IT HAS MADE FOUR SUCCESSFUL PRESENTATIONS AND APPEARED AT AN I.A.Q.C. LOCAL CHAPTER MEETING. INCLUDES TWELVE CAFETERIAL WORKERS, THEY MEET WEEKLY ON SCHOOL TIME. (3:00 P.M. - MONDAYS)

E. **TRANSPORTATION CIRCLE** - OPERATING SINCE 1984 HAS DONE THREE PRESENTATIONS - ALL ACCEPTED. THEY HAVE SIX MEMBERS AND MEET ON SCHOOL TIME (9:30 A.M.) EACH THURSDAY MORNING.

CIRCLES THAT ARE PRESENTLY INACTIVE:
-GUIDANCE DEPARTMENT WALT WHITMAN HIGH SCHOOL
-READING SPECIALISTS- DISTRICT-WIDE
-DISTRICT OFFICE CLERICAL STAFF

THE PEOPLE AND THE PROBLEMS

THE PEOPLE

THE ENTIRE ORGANIZATION HAS POTENTIAL FOR INVOLVEMENT IN THE QUALITY CIRCLE PROCESS AND ULTIMATELY IN THE SUCCESS OR FAILURE OF THE ORGANIZATION'S COMMITMENT TO EXCELLENCE. THE MOST IMPORTANT PEOPLE TO THE EFFECTIVE OPERATION OF A CIRCLE ARE: THE STEERING COMMITTEE, THE FACILITATOR, THE CIRCLE LEADER, THE CIRCLE MEMBERS AND THE ADMINISTRATION OR MANAGEMENT.

THE **STEERING COMMITTEE** IS A USEFUL AND SUPPORTIVE GROUP TO ASSIST THE ACTIVE QUALITY CIRCLE PROGRAM. THE MEMBERS SHOULD BE REPRESENTATIVE OF ALL UNITS OR DEPARTMENTS WITHIN THE ORGANIZATION, THEY SHOULD RECEIVE TRAINING, AND WHERE FEASIBLE ACTUALLY PARTICIPATE IN A QUALITY CIRCLE. THE EFFECTIVE STEERING COMMITTEE GUIDES THE PROGRAMS THROUGH ITS EARLY STAGES OF DEVELOPMENT, AND PUBLICLY ENCOURAGES ITS ACTIVITIES.

POTENTIAL PROBLEMS WITHIN THE STEERING COMMITTEE COULD DEVELOP IF CHANNELS OF COMMUNICATIONS ARE NOT USED TO INFORM, AND RELAY NEEDED INFORMATION.

THE **FACILITATOR**, THE INDIVIDUAL WHO OFTEN DOES THE TRAINING, OVERSEES AND RUNS THE PROGRAM. THE FACILITATOR IS THE AXIS ON WHICH THE PROGRAM HINGES AND GETS ITS POWER TO DEVELOP. THE ROLE OF THE FACILITATOR IN THIS PROCESS IS TO PROVIDE START-UP TRAINING FOR CIRCLE LEADERS, SUPPORT NEW CIRCLES IN THEIR BEGINNING PROCESS, AND TO TROUBLESHOOT FOR THE ESTABLISHED CIRCLES. THE FACILITATOR ALSO SERVES AS A BRIDGE OR COORDINATOR TO POINT OUT TO CIRCLES WHEN THEY ARE DUPLICATING EFFORTS OR EXPERIENCING PROCEDURAL DIFFICULTIES.

PROBLEMS: FREQUENT PROBLEMS AND SUGGESTIONS FOR PREVENTING THEM

I. LACK OF PROPER OR COMPLETE TRAINING FOR MANAGERS AND QUALITY CIRCLE LEADERS

ONE OF THE WAYS TO PREVENT PROBLEMS IS THROUGH TRAINING, RETRAINING AND FOLLOW-UP.

THIS HELPS TO EMPHASIZE, TO ALL INVOLVED, THE IMPORTANCE OF FOLLOWING THE PROCEDURES OF THE PROGRAM, AND WORKING TOWARD THE OBJECTIVES OF THE INDIVIDUAL ORGANIZATION. TRAINING SHOULD BE A TOP-DOWN PROCESS. EMPHASIS SHOULD BE PLACED ON SKILL DEVELOPMENT APPROPRIATE FOR LEADERSHIP AND FACILITATING GROUPS. SOME MANAGERS ARE NOT RESISTANT TO THE CONCEPT OF EMPLOYEE INVOLVEMENT, BUT LACK THE PROPER SKILLS AND TRAINING TO BE EFFECTIVE. PRIDE, AND THEIR POSITION OFTEN PREVENT THEM FROM SEEKING THE NECESSARY INFORMATION TO DEVELOP THE NEEDED SKILLS. IT IS ROUTINELY ASSUMED THAT THEY AUTOMATICALLY POSSESS THE NECESSARY QUALITIES AND SKILLS BECAUSE OF THEIR POSITION IN THE ORGANIZATIONAL HIERARCHY. A HELPFUL APPROACH MIGHT BE TO FORM A GROUP OF TOP-LEVEL MANAGERS REPRESENTING A CROSS SECTION OF THE COMPANY TO ASSIST IN FORMULATING OBJECTIVES AND POLICY GUIDELINES, A GROUP SIMILAR TO THE STEERING COMMITTEE.

II. CIRCLE LEADERS ARE OFTEN UNSKILLED IN THE USE OF GROUP DYNAMICS.

FORMULATORS OF THE AMERICAN MODELS OF QUALITY CIRCLE HAVE ACKNOWLEDGED THAT THE PACKAGED TRAINING OFFERED BY SOME OF THE WELL-KNOWN QUALITY CIRCLE CONSULTANTS DOES NOT INCLUDE ENOUGH INFORMATION ABOUT GROUP PROCESS SKILLS OR THE DYNAMICS OF SMALL GROUP INTERACTION. FREQUENTLY, SKILLS SUCH AS COMMUNICATION, COOPERATION, CONFLICT RESOLUTION, LISTENING, AND VALUES CLARIFICATION ARE OVERLOOKED OR LEFT OUT OF THE TRAINING PROGRAMS. IT IS NECESSARY TO INCLUDE AND EMPHASIZE THESE IMPORTANT BEHAVIORAL CONCEPTS WHEN WORKING WITH EMPLOYEES ON ALL LEVELS. EXPERIENCE HAS SHOWN THAT FREQUENT CIRCLE BREAKDOWN COMES WHEN INTERPERSONAL CONFLICTS DEVELOP, AND ARE LEFT UNRESOLVED.

III. TOO MANY CIRCLES ARE CREATED AND STARTED TOO QUICKLY, RATHER THAN BUILDING SLOWLY.

SOME OF THE PROBLEMS EXPERIENCED BY ORGANIZATIONS IN THE EARLY STAGE OF QUALITY CIRCLES REVOLVE AROUND THE SHORT-SIGHTED VIEW MANY HAVE OF ANY NEW PROGRAM. TRADITIONALLY, THE VIEW HAS BEEN THE "WHAT'S THE NEW PLAN THIS YEAR" APPROACH. "QUALITY CIRCLES," O.K. THIS ATTITUDE NEGATES THE APPROACH NEEDED FOR A SUCCESSFUL EXPERIENCE. QUALITY CIRCLE IS A "CONDITIONING" - A COMPLETE RE-ORIENTATION OF THE TRADITIONAL OPERATING PHILOSOPHIES. EXPANDING THE POWER BASE OF THE ORGANIZATION TO INCLUDE THE MINDS AND THOUGHTS OF ALL CONCERNED IS NOT A SHORTSIGHTED TEMPORARY UNDERTAKING. IN ORDER TO BEGIN TO SECURELY INSTALL SUCH A PROGRAM, CAREFUL DELIBERATE PLANNING AND RESEARCH MUST LEAD THE WAY. SURVEY THE ENTIRE ORGANIZATION TO DETERMINE ATTITUDE, PROFICIENCIES, AND READINESS. THIS PROCESS COULD TAKE A YEAR OR MORE TO COMPLETE LONG BEFORE THE FIRST CIRCLE BEGINS OPERATION.

SUGGESTED GUIDELINES FOR ORGANIZING CIRCLES IN THE SCHOOLS

(1) COMMITMENT TO IMPLEMENT - SUPERINTENDENT/BOARD OF EDUCATION/UNIONS
(2) ESTABLISH A STEERING COMMITTEE INCLUDING:
  -SUPERINTENDENT (OR DESIGNEE) AND SCHOOL BOARD MEMBER
  -BUSINESS MANAGER
  -REPRESENTATIVES OF ALL EMPLOYEE GROUPS - TEACHERS, ADMINISTRATORS, CUSTODIAL, CAFETERIA, AIDS, MONITORS, TRANSPORTATION, CLERICAL
  -FACILITATOR (SELECTED)
(3) SECURE TRAINING FOR THE FACILITATOR
(4) FACILITATOR AND OUTSIDE CONSULTANT TRAIN THE STEERING COMMITTEE.
(5) PRESENT A PRE-PACKAGED QUALITY CIRCLE OVERVIEW, MEDIA PRESENTATION, PLUS FACILITATOR TO ANSWER INITIAL QUESTIONS, TO ALL WHO WILL LISTEN!
(6) MAKE PRESENTATIONS TO MANY SCHOOLS, GRADES, DEPARTMENTS, SPECIALIZED AREAS, SUPPORT SERVICE AREAS.
(7) DETERMINE VOLUNTEER GROUPS TO BEGIN ACTUAL CIRCLES - OTHERS WILL BE INCLUDED LATER.
(8) DETERMINE CIRCLE LEADER - SUPERVISOR OR MEMBER OF THE GROUP (PEER).
(9) FACILITATOR TRAINS CIRCLE LEADERS
  - INCLUDE SUPERVISOR IF POSSIBLE
  - INCLUDE SENIOR MEMBER OF WORK AREA OR A DEPARTMENT CHAIRMAN.
(10) DETERMINE START-UP TIME FOR ACTUAL QUALITY CIRCLE MEETINGS. DATE, TIME, PLACE.

(11) Establish a forum for circle leaders
- periodic meetings (support)
- share information
- recognize accomplishments

(12) Publicize Quality Circle accomplishments in school papers
- education journals
- local newspapers/media
- report activities at regular teacher meetings, administrative councils, union meetings etc.
- school board meetings

(13) Evaluate
- keep careful records, document Quality Circle activities.
- survey members for comments, suggestions, ideas
- send evaluations to all steering committee members

(14) Review
- Success of the circles, highlight accomplishments, encourage circle involvment by non-members
- Follow-up on outside Qualicy Circle activities such as I.A.Q.C.

Conclusion

One reason to evaluate Quality Circles is the cost factors. Training, materials, meeting time are all expenditures, and few managers are willing to continue to invest in this or any other process unless they are confident a payback will result. Some organizations use measurement criteria that is tracked pre and post circle implementation. This increases and encourages the long term support at all levels of management.

The greater the opportunity for employees to become involved in quality of their lives at work, the greater likelihood for achieving educational excellence, organizational goals, and quality services for our children. The end results are an improved quality of work life, improved organizations, and improved "bottom line" productivity, in the world market.

All must be aware that organizations are at a critical croosroad, involvement, motivation and creativity can assist in turning the crisis around so that our children will profit.

There are no simple solutions, it will take everyone working together to provide a definite direction out of our dilemma.

Biographical Information

Joan Harris Wilson received her Master's Degree in Administration from Hosftra University and is working toward her Doctoral Thesis in Administration. She has spent the last 15 years in the field of communications, staff and organizational development. Her activities in the field of management training include: presenting at the Northeast Fall Conference for I.A.Q.C. in Worcester, Massachusetts; chairing the Program Committee for the International Association of Quality Circles on Long Island, and acting as a facilitator in a large educational institution.

Ms. Wilson is a lecturer in managment development and communications and has conducted workshops for administrators, supervisors and line personnel throughout the Northeast.

M: Circle Presentations

AT&T NETWORK SYSTEMS
OMAHA WORKS

The Buck$ Really $tart Here

A success story using a systematic approach to solve work-related problems in a large manufacturing facility.

Vern Larson
Coordinator/Facilitator, Quality of Work Life/Quality Circles
AT&T Network Systems Media Division, Omaha, NE
Sharon Brown
Facilitator, Quality of Work Life/Quality Circles
AT&T Network Systems Media Division, Omaha, NE

Connector Pride - QWL Circle #3 Presenters:

Dan Dehning	Circle Leader
Donna Erickson	Circle Assistant Leader
Lynn Hapke	Circle Secretary
Dennis Fleming	Circle Member
Gary Scott	Circle Member
Lynette Tipler	Circle Member
Mary Ann Smith	Circle Member
Shirley Peterson	Circle Member

Connector Pride - QWL Circle #3 made a presentation involving the successful implementation of two projects that they worked on in 1986.

Connector Pride has been in existence since late 1982. It has three of its original members, three members with over two years experience, and two members who have participated this past year. During Connector Pride´s existence, it has made successful presentations on a wide range of projects that either improved their job performance or improved the product quality. They also conducted a study and initiated the use of personal radios with headphones at each person´s work station. Connector Pride was the 1986 AT&T Network Systems - Omaha Works Outstanding Circle of Excellence Award Winner. Connector Pride is a conscientious, hard-working group of AT&T employees who believe in and practice the Quality of Work Life philosophy.

The AT&T Omaha Works manufactures telecommunications equipment and employees 4,000 people. The team members of Connector Pride QWL Circle #3 represent a department in the plant which manufactures telephone network apparatus; more specifically multiple wire connectors used by telephone installers to splice cable together.

Connector Pride´s department employs 125 people. These people are responsible for manufacturing all the various styles that constitute a "710 connector." Thousands of plastic molded parts are delivered daily to the department where inking and stamping of all the various codes occurs. After parts are stamped, they are separated, boxed and distributed to the assemblers. Assemblers put contact terminals - which hold the wires - in between the molded parts and heat seal them together. Some parts require an additional layer of waterproof filling material. These parts are covered at the filling machines and then also delivered to the assembly area. Once the parts are completely assembled, they are individually packaged in plastic bags by a machine.

The product, now ready to be shipped, is taken to the packing area where the various codes are separated and shipped.

The connectors are six inches long. While they are not complex parts, there is enough molding detail involved so as to require constant monitoring by all employees to insure top quality of the finished product. The volume of parts the department utilizes in one week´s time averages in the hundreds of thousands.

Project #1: Involved the designing of an improved system of tracing parts in the production process.

Project #2: Concerned the recycling of unacceptable parts that were routinely being scrapped.

The team used Quality Circle problem-solving techniques to identify, analyze, solve and implement their solutions to these two problems. These projects substantially reduced the amount of scrap in their department resulting in a tangible cost savings of over $71,000 annually.

Connector Pride´s first scrap project focused on the quality of molded plastic parts the department uses to assemble their 710 connectors. Too often defects in the molded parts were discovered in the assembly process. By this time, no manufacturing information was available on these parts. Due to the sheer volume of parts being used, there was no way of knowing who ran the parts, what machine and tool was used or when the parts were made. Many labor hours were lost detailing for all the defective molded parts.

To solve this problem, the circle used cause and effect analysis. They developed a flow-chart showing each step in the manufacturing process. On this chart, they indicated the places in the process where they lost traceability of the product. Brainstorming sessions resulted in the development of a new follow-ticket. Because of the many divisions of the parts through the department, a practical follow-ticket solution was difficult to devise.

A sequential numbering system was decided on. The sequential number originated with each tub in the molding department. When the parts came to the 710 job, the department now had the manufacturing history of the plastic parts. The number was used to identify who ran the parts, what machine and tool was used, and when the parts were made. The follow-ticket number was passed along at each stage in the assembly process. Each tub had a number so if a problem did arise defects could be easily pinpointed and corrected.

The circle revised the old tickets to include the new sequential numbering system. By simply writing this number at their part of the job and passing it on, many labor hours were saved by not having to detail for defects. By devising a sequentially numbered follow-ticket system, the circle reduced the department´s scrap and reduced time spent detailing. This resulted in substantial cost savings for Connector Pride´s department.

Connector Pride´s second scrap project concerned plastic parts that were being scrapped. These parts fell on the floor or were incorrectly filled with a waterproof compound. First the team collected data on all of the scrap in their department. From this data, they pinpointed where most of the scrap was generated. It was found that many of these scrapped parts could be reused if the dirt and excess filling compound were cleaned off them.

Basic cause and effect problem analysis was conducted. It showed that the main cause of this scrap was human error. Brainstorming was used to determine possible solutions to the problem. It was suggested to soak the parts in a solvent (used already on the job) to get the parts cleaned. Testing was done by the circle on several methods of this procedure. The main concerns were that the cleaning process be kept simple and that it be cost effective. They worked closely with their engineers and supervisors on their various ideas. A cleaning procedure was decided on by all concerned.

Parts are soaked 24 hours in the solution and then dried another 24 hours. The parts are then put back into the system to be used in a finished product.

This process has reduced the amount of scrap that was being generated and has resulted in a substantial cost savings for their area.

CONCLUSION:

Both of these projects have been successfully implemented and the cost savings results have been increasing each month. The team expressed that communication has significantly improved between their department and supplying departments by working on these projects. The team also feels that the results of these projects have made their jobs easier to perform and that they have improved the Quality of their Work Life.

BIOGRAPHICAL INFORMATION

Vern Larson is the Coordinator/Facilitator of the Quality of Work Life/Quality Circle Program at AT&T - Omaha Works. Vern has been employed by AT&T for 23 years and is the Chairman of the AT&T IBEW/Independent Locations "Facilitators Administrative Council." Vern is currently working toward a Bachelors Degree in Business Administration at Bellevue College in Bellevue, NE.

Sharon Brown is the Facilitator of the Quality of Work Life/Quality Circle Program at AT&T - Omaha Works. Sharon has been employed by AT&T for 19 years and is a member of the AT&T IBEW/Independent Locations Facilitators Administrative Council." Sharon is currently working on a Bachelors of Science degree at the University of Nebraska in Omaha, NE.

Dan Dehning is a Level I Production Specialist and is the current circle leader. Dan has worked at AT&T for 18 years.

Donna Erickson is a Level I Production Specialist and is the current Circle Assistant Leader. Donna has worked at AT&T for 17 leaders.

Lynn Hapke is a Level I Production Specialist and is the current circle secretary. Lynn has worked at AT&T for 17 years.

Dennis Fleming is a Level I Production Specialist and is a member of the circle. Dennis has worked at AT&T for 17 years.

Gary Scott is a Level I Production Specialist and is a member of the circle. Gary has worked at AT&T for 17 years.

Lynnette Tipler is a Level I Production Specialist and is a member of the circle. Lynnette has worked at AT&T for 18 years.

Mary Ann Smith is a Level I Production Specialist and is a member of the circle. Mary Ann has worked at AT&T for 22 years.

Shirley Peterson is a Level I Production Specialist and is a member of the circle. Shirley has worked at AT&T for 24 years.

Administrative Guide Book/Cost Reduction

Dependables Making Things Better (MTB) Team

Recognizing the need for condensed general company information, the Quality Circles Secretarial Team, the Dependables, of AVX Corporation, Myrtle Beach, South Carolina, compiled an Administrative Guide Book This is useful to long-term employees and especially helpful to new employees. It has already received enthusiastic acceptance by Management, Engineers, and Secretaries. In addition to the Guide Book, the Dependables worked on a Cost Reduction project, devoting 20 hours of concentrated Task Force time. This Task Force gathered data on ways to reduce cost of spending on such items as rental cars, air travel, hotels, subscriptions and memberships, telephones, FAXES/TWX's and office supplies. Our Management has been very receptive and supportive about our ideas for improvement. We are looking forward to pursuing future projects within our span of control.

INTRODUCTION OF AVX CORPORATION

On December 27, 1948, the Hi-Q Division of Aerovox Corporation (now called AVX Corporation) began operations in Myrtle Beach, South Carolina. From 1948 to 1987, AVX Corporation has grown from 14 untrained workers to 1835 trained employees.

Headquartered in Myrtle Beach, South Carolina, AVX is the world's leading supplier of multilayer ceramic capacitors, the fastest growing segment of the capacitor industry...even faster than the integrated circuit market.

The ceramic capacitors, which we manufacture, are devices which can be used to store electrical energy or control the flow of electricity. MLC's (as we call our multilayer capacitors) consist of several layers of ceramic material separated by metal electrodes in a staggered pattern. The many alternating layers of ceramic and electrode materials form a very compact and efficient capacitor. MLC's, because of their small size and efficiency, can be used in many applications. Capacitors are used in virtually all electronic circuits from video games to military electronics application.

HISTORY OF MAKING THINGS BETTER (MTB) (QUALITY CIRCLES)

Quality Circles were started in late 1979 at AVX Corporation with 5 pilot circles. Each circle leader that was selected attended quality circle training to learn the problem solving techniques, group dynamics and leadership skills. We have leadership training sessions once each quarter.

During 1983 the Quality Circle Steering Committee agreed to change the program to "Making Things Better" Teams and that every non-exempt and exempt employee would attend a 16-hour training seminar. We have established an MTB Board comprised of employees from various functions to assist the facilitator in managing our MTB Team concept.

At this printing we have 4 management teams and 20 hourly (factory) teams working with the problem solving techniques to address concerns in their work areas. We believe that all of us...working together.. will succeed in MAKING THINGS BETTER.

HOW DEPENDABLES WERE STARTED

Although Quality Circles were started at AVX Corporation in 1979, the Dependables secretarial MTB team did not form until October of 1984.

Many of our secretarial staff were interested in starting an MTB team and it was after our facilitator sent out an interest questionnaire that we were formed into a team. The interest questionnaire dealt with meeting day, time and our managers' approval. We meet twice a month on Thursday from 2 - 3 P.M. This is during our work day, so our telephones are monitored by our managers or another designated individual located in the respective areas.

MTB problem-solving techniques were used to determine our team name and the projects we would be working on. After using the brainstorming process and developing a laundry list of problems that the secretarial staff was encountering, we began our pursuit of several projects which we prioritized by using the Decision Grid Diagram.

For the purpose of this presentation, we will describe the activities involved in obtaining approval, data gathering and publication of the Administrative Guide Book and our Cost Reduction Project.

ADMINISTRATIVE GUIDE

Recognizing the need for condensed general company information which would enable new secretarial and clerical personnel to more quickly become proficient in their jobs, the MTB "Dependables" selected as a project the publication of an Administrative Guide. The "Dependables" began this project in April, 1985 and after devoting 220 man-hours the guide was completed in August, 1986.

In compiling the Administrative Guide, our first priority[1] was to develop a list of subjects to be included. We then set up task groups and leaders, divided the subjects among them, and it became their responsibility to research and prepare their assigned subjects for the guide. The research gave us the opportunity to discuss with many department heads our mission for the Administrative Guide. We became very familiar with company policies and procedures and also questioned why some were outdated or not being used.

After each section of the guide was completed, a draft was sent to the pertinent department head, e.g., Purchasing, Human Resources, Accounting, for their comments or changes. As these sections were returned, required changes were incorporated into the document and it became a completed section. After all department head approvals were received, a completed draft was sent to the Human Resources Director for final approval and the inclusion of a disclaimer.[2] When this final approval was received, we went to press - with a total of 209 pages!

After the guides were printed and in their brightly colored pre-printed binders, our MTB group presented the Administrative Guide to Management for their acceptance, which was readily given.

Revisions and updates are sent to one assigned member of our MTB group for quarterly updates. The task group assigned to distribution of the guides personally inserts the revisions into each guide to insure that every guide is kept up-to-date at all times.

Our goal was to ensure a guide was readily available to all secretarial and clerical personnel as well as to any employee who might need it as a reference. Forty-seven guides are in use at present. A task group was set up within our MTB group to handle distribution. This task group personally delivered each guide to the recipient. Each book is labeled with the book number, department name and number. This labeling process enables us to know where each guide is at all times.

The Administrative Guides cost $17.63 each. The books are three-inch, pre-printed colored binders, with pre-printed indexes. This cost includes the cost of the paper and printing. We chose to use the loose-leaf binders because of the ease in inserting revisions.[3]

Positive response to the guide was immediate. "I would never have learned my job so quickly without this guide"; "I would not have known what forms to use, where to get them, nor how to use them had it not been for the guide"; "The guide is easy to understand and use"; "This guide has saved me a lot of time", are only a few of the comments from new clerical and secretarial personnel. Experienced and recently hired support staff, secretaries and clerks have found it to be extremely useful and have stated how valuable it would have been to them if it had been available when they were hired. They feel, in many instances, the guide would have saved them time by eliminating the 'trial and error' process from their jobs.

Employees in other fields were impressed with the variety of subjects covered and found, by referring to the guide, they find many answers for themselves without having to ask the secretary. Several managers have made very positive statements regarding how desperately the guide was needed. Managers in AVX locations other than Myrtle Beach have requested copies of the Administrative Guide since becoming aware of its existence.

COST REDUCTION PROJECT

In January, 1986, the Dependables were asked by the Vice President of our facility to work on a Cost Reduction Project for the plant. We completed this project in August, 1986. The electronics industry, of which we are a part, was in an economic recession and we were asked to scrutinize daily expenditures within our control.

A task group from the Dependables was formed to gather data on such items as rental cars, air travel, hotels, subscriptions and memberships, telephones, FAXES/TWX's and office supplies. The secretarial staff immediately began a cost reduction in everyday office supplies...which provided an immediate savings in our budget.

The Cost Reduction Project gave us an opportunity to monitor items used in our respective operating areas and challenge the waste of specific materials, e.g., yellow lined pads, pens and pencils. Another example of how we reduced costs was explaining the per page cost of sending a FAX in the most cost efficient way.

3-Page FAX to San Salvador

Without Cover Sheet

$2.48	1st Page
$2.34	2nd Page
$2.34	3rd Page
$ .99	3 Sheets Paper
$8.15	Total Cost

With Cover Sheet

$2.48	Cover Sheet
$2.34	1st Page-Message
$2.34	2nd Page
$2.34	3rd Page
$1.32	4 Sheets Paper
$10.82	Total Cost

$10.82	With Cover Sheet
$ 8.15	Without Cover Sheet
$ 2.67	Cost Of Cover Sheet Which Is Not a Part of the Message

The Cost Reduction Task Force submitted a proposal to the Dependables Team Members for review. This proposal was then presented to Management (comprised of the MTB Board, other team leaders and Managers), receiving a very favorable response.

The findings of this cost reduction study were then copied and distributed to all AVX secretaries for routing through their respective departments.

Many things are being handled certain ways because "that's the way it's always been done." This is the easy way out, but not necessarily cost effective. We as secretaries now question things that have previously been done automatically. When we are aware of better and less costly ways of doing our job, we suggest the best choice available. We urge employees to be open-minded on new procedures.

Simple Savers

Items	New	Recycled
Pendaflex Folders	.31	.01
File Folders	.09	.01
3" Ring Binders	$7-$20	.00

Our guidelines for cost reduction are not meant as disruptions. We stress common sense in making determination of best options and choices and to remember these cost savings which can have an impact on profit sharing and raises!

SUMMARY

Aside from the Administrative Guide Book and Cost Reduction Projects, the Dependables Team has also completed several other projects. These include:

- Standardized mylar format for all production and engineering presentations
- Standardization of telephone courtesy for the plant
- Standardization of all letters, memos and envelopes
- Restriction of the use of the paging system at AVX to emergencies only

MTB Teams (Quality Circles) at AVX Corporation, Myrtle Beach, have been developed to improve product quality, communication and teamwork. The Dependables, in the future, will continue to strive to Make Things Better at AVX Corporation to insure jobs and secure our right to exist and prosper.

ADMINISTRATIVE GUIDE

1

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DISCLAIMER[2]

ATTENTION

The materials contained in this Administrative Guide are solely for the purpose of providing assistance in the form of outlines and synopses of various policies, practices, and other points of information regarding AVX Corporation for clerical and administrative personnel of AVX Corporation.

The contents of this Guide should not be taken to reflect any policy or practice in its entirety.

Should questions arise regarding any Facility or Corporate policy, practice, or procedure, the reader should contact the appropriate Department Head for guidance.

The contents of this Administrative Guide should not be duplicated without prior approval from the Facility Human Resources Manager.

Richard Aiosa
Corporate Director,
Human Resources

HOW TO USE THIS GUIDE[3]

The index to this guide is broken down into three separate categories:

1. Table of Contents

   Divided into 11 sections. Each section has a title name, then a list of the specific categories covered in that section, with corresponding page numbers.

2. Alphabetical Index

   List of categories in alphabetical order, with corresponding page numbers.

3. Forms Index

   List of AVX general forms in alphabetical order with corresponding page number which gives purpose and use of each form.

Guide Updates

The Administrative Guide is in loose-leaf format to allow easy updating by the addition or replacement of pages in the binder holding the guide. This additional updated information will be compiled quarterly and an MTB task group will insert this new information in each individual Administrative Guide.

REFERENCES

Labovitz, Ph.D., George H.

Making Things Better
A system for Organizational Excellence - Problem Solving Techniques, Burlington, Massachusetts: Organizational Dynamics, Inc., 1980

DEPENDABLES MTB MEMBERS

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Rita Barron, Secretary
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Rita Johannes, Secretary (Team Timekeeper)
Management Information Systems

Carol Spofford, Secretary (Team Recorder)
Administration - Leaded/Surface Mount Products

Renata Wilson, Secretary
Surface Mount Products Division

Julie Wingard, Secretary (Team Leader)
Ceramic Raw Material/Ceramic Film Manufacturing

Helen Wynne, Secretary
Human Resources Department

Facilitator
Vivian Dexter
MTB Coordinator

"Taiwan vs. Horsham PA"

A Cut Above
Management Presentation

Decision Data Computer Corporation
100 Witmer Road, Horsham, Pennsylvania 19044

Claudia Galletti - Assembler and Pride Team Co-leader
Ruth Loughlin - Assembler and Pride Team Co-leader
Adriana Palermo - Assembler and Pride Team Member
Belinda Tinney - Assembler and Pride Team Member
Tom Tumelty - Records/Procedures Manager and Team Facilitator

The "A Cut Above" team presentation will describe how Quality Circle techniques were applied to reduce reject rates, eliminate down-time, save set-up time, and improve the efficiency of assembly. This effort caused the company to keep the production of Printed Circuit (PC) boards in-house as opposed to offshore production.

The Company

Decision Data Computer Corporation, a subsidiary of Decision Industries Corporation, is a worldwide manufacturer of computers and peripherals compatible with the IBM system 34, 36 and 38 computer product line. Decision Data has been involved for three years in a "Pride Team" (Quality Circle) program, in which employees solve problems in their areas through the use of Quality Circle techniques. Currently, there are eighteen teams actively solving problems and saving the company a substantial amount of money.

Decision
Data
Computer
Corporation
A Decision Industries Company

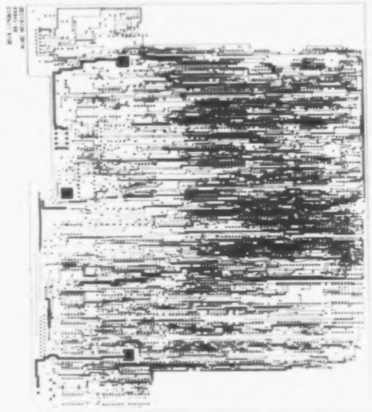
A CUT
ABOVE
A DDCC PRIDE TEAM

Here now is the "A Cut Above" team presentation.

The Presentation

Introduction by Adriana Palermo: Here at Decision Data we have Pride Teams (Quality Circles) that are making things better. Our team, "A Cut Above" is a manufacturing team. The team has been together for two years and we have a lot to be proud of.

Our team consists of Assemblers on the Printed Circuit (PC) board assembly line. The boards we assemble are components for our company's computer peripherals (printers, CRT's, work stations, etc.).



CIRCUIT SIDE (LAYER 4)

We make as many as twenty different PC boards averaging over 250 components with thousands of boards run each year.

The first thing we worked on was to get the bent Integrated Circuit (IC) leg rejection rate under control. The per board rejection rate was at ten percent when we first collected data. One month later the rejection rate dropped to one percent, due to employee awareness, improvements to the process, like improved lighting, and assembly lines. The rejection rate has stayed at the one percent level for over a year now. The team saved a considerable amount of money in rework and field repair, approximately $100,000 in the first year.

Next Belinda Tinney will explain how we "brainstormed" and selected our next project and why.

We were assembling the new Tilting Work Station (TWS) Printed Circuit (PC) board when the company told us we were only going to build this PC board until the bugs were worked out, after which, the boards would be manufactured offshore in Taiwan.

In chosing our next project, the following questions were considered:

1. What can we do to improve our work?
2. Can we improve our work in both quality and productivity?
3. Can we as a team do the project?
4. Can we keep the work here in Horsham?
5. Can we help bring in work from other companies?

Our team decided to see what we could do to keep this and other PC boards here. We asked and received permission from our Manufacturing Engineers, to look at the Manufacturing Instructions (MI's) and make some changes on how the TWS PC board was assembled. MI's are our step-by-step instructions on how the PC boards are assembled.

Our team figured, if we changed the order of assembly, it would allow the PC board to go down the "slide line" smoother and allow us, the Assemblers, to do a faster job. The "slide line" is the assembly line where components are inserted into the PC boards. Our changes were accepted, and as a result of the changes, the "slide line" showed a better quality product and better production rate.

Ruth will now show you the figures as well as some of our "quick fixes."

A Cut Above

Slide Line Time Sample

Before new MI's

March '86 5½ min

After new MI's

July '86 3 min

Time saved 2½ min per TWS board

The rejection rate over a five month period starting in March was twenty-five percent of all TWS PC boards run. After implementing the new MI's, failures were reduced to less than eight percent. Additionally, our changes resulted in a time saving of two and a half minutes per board. Using figures given us by our Engineers we were able to save the following:

A Cut Above

TWS dollar savings

2500 Boards per month

2500 x 2.5 min = 7750 min.

7750 ÷ 60 min = 118.156 hr.

118.156 hr x $18.50 overhead
= $2,184.89/month

$2,184.89 x 12 = $26,317.68

saved with new MI's

Next we worked on "Quick Fixes":

1. The team recommended the Stockroom place Integrated Circuits (IC's) in marked bins which would save a minimum of a hour set-up time for the IC Inserter Machine Operator by an improved sort of IC's.

2. By having the IC Inserter Machine Operator place the PC board ID labels on the boards while the machine ran other PC boards saved another hour of set-up time.

Again using costing figures supplied by our Engineers:

A Cut Above

Savings using "Quick Fixes"

Marked Bins from Stockroom

1hr./day × 240 days/yr × $18.50 overhead cost = $4,440.–/yr.

Labeling by Inserter Operator

1hr./day x 240 days/yr x $18.50 overhead cost = $4,440.–/yr.

Total Savings

New MI's	$26,317.68
Stockroom Bins	4,440.00
Labeling	4,440.00
1985 Project	100,000.00
	$135,197.68

Next Claudia Galetti will summarize the efforts of the team.

As a result of our team's efforts, we have improved quality, increased efficiency and the TWS PC board is still being manufactured in our Horsham facility.

The TWS PC board is just the beginning for us. We have now worked on other PC board MI's and they too are being improved due to our modifications and thus continue to improve quality and productivity.

For us "A Cut Above" means:

HORSHAM 1 - TAIWAN 0

Special Thanks

The "A Cut Above" team would like to thank Larry Gerhard our President, Walt Sparrow our Vice President, Ed Driscoll our Director for giving us the opportunity to meet and make a contribution. Also thanks to Tom Tumelty, our facitator, Paul Orleman our Development and Training Manager for helping us when we needed it and to our Industrial Engineers, Fred Wicherman, Dan Campbell and Dave Strouse for all the hours helping us figure our cost savings and rejection rates.

Post Presentation

The company is now building more and more PC boards in Horsham thanks to the efforts of all employees especially the members of the "A Cut Above" Pride Team.

Development of the Los Alamos National Laboratory Plutonium Facility Decontamination Room

Jerilyn S. Mosso
Health Protection Technician, Los Alamos National Laboratory, Los Alamos, NM 87545
Floyd E. Smith
Health Protection Technician, Los Alamos National Laboratory, Los Alamos, NM 87545
Michael J. Owen
Health Protection Technician, Los Alamos National Laboratory, Los Alamos, NM 87545
W. Allen Treadaway
Health Protection Technical Supervisor, Los Alamos National Laboratory, Los Alamos, NM 87545

For several years the Health Protection Group attempted to remedy the problem of a facility to adequately handle personnel plutonium contamination incidents. Through the efforts of our Quality Circle a presentation was made to management, which immediately appropriated space and funds for the construction of a complete decontamination facility.

QC INTRODUCTION

The Semper Securitas Quality Circle is a support work force at Los Alamos National Laboratory's Plutonium Processing Facility. We are members of the Health, Safety, and Environment Division of the Laboratory. As the Chemistry Health Protection Group, we provide radiation safety support surveillance, and expertise for the various research and development processes in the Plutonium Facility. In June of 1985, at the request of management, the Quality Circle was established to involve the health protection technical supervisors and technicians in the problem solving and decision making process of our group.

DEFINE THE PROBLEM

In 1975 when the Plutonium Facility was designed a specialized decontamination room was planned; however, this space was needed by operating groups. Personnel decontamination instead has been done by using existing janitorial sinks and emergency showers. While this situation was satisfactory for minor contamination incidents, it was inadequate for large scale problems involving multiple personnel. Further, the situation worsened between initial operations in the facility in 1978 and the early 1980's due to a large increase in the number of facility operations personnel. Since the building was completed in 1978, several attempts were made without success by supervisory personnel to provide an adequate decontamination room. We saw this problem as a high priority and took on the task of designing a complete and modern personnel decontamination room.

BRAINSTORMED FOR IDEAS

The brainstorming method was used to determine the strategy necessary to solve the immediate problem. The most important consideration was the location of the proposed decontamination room and acquisition of the space. We also brainstormed to compile a list of equipment and fixtures we thought would be appropriate for a decontamination room suitable for several men and women. The sessions enabled us to come up with various alternatives to acquire the needed space and also some ingenious ideas for improving the methods for decontaminating various personnel. One example was the need for an appropriate method of decontaminating a worker's hair. This entails washing the person's hair possibly up to five times. During the brainstorming session one of the circle members suggested a beautician's sink. We had been using a janitor's sink where the individual was in a position to lean forward into the sink. This position, besides being uncomfortable for the individual, was possibly a safety hazard due to two factors: 1) the person may hit his or her head on the faucet which protruded approximately six inches, and 2) the contamination which was being washed off the hair could flow down into the worker's eyes, nose, or mouth.

With the list of fixtures and equipment we designed a physical layout for the two rooms. We felt that two rooms were necessary due to past occurrences involving both women and men being contaminated at the same time.

BARGAINING FOR SPACE

Several Quality Circle members took on the task of drawing possible floor plans which incorporated the list of fixtures and equipment. There were six floor plans drawn up and two were rejected immediately through the multi-voting process. These two floor plans were in an upstairs mezzanine and the basement area. They were rejected because both areas were too far from the main floor and processing areas which would necessitate transport of contaminated personnel and thereby increasing the potential for spread of contamination. Another area was rejected since total usable floor space was less than 200 square fett which was below our previously established minimum of 350 square feet. Of the remaining three areas being considered, two more suggestions were discarded. One because there were already plans for its use and the other because the space was already being used by the electronics group which has a high priority at our site.

From six floor plans submitted we decided on one particular floor plan which utilized the existing janitor's closet plus approximately 200 square feet of adjoining space for expansion. It became obvious that this area would be ideal since it was on the opposite wall of the existing decontamination area. It was necessary to convince the operating group using this area that they would not be losing any usable floor space but, in reality, would be gaining wall cabinet space and some floor space. At this point we informed the users of the space that we would be submitting a request to management for a new decontamination room expansion. We informed them that we would like to trade their space next to the janitor's closet for space which our group used as a storage area. We had carefully considered the idea of giving up our storage space and felt that it would be beneficial if we could expand the proposed decontamination room. Most of the miscellaneous storage could be moved to another area and our instrument storage to a small airlock nearby.

Many discussions took place between our Quality Circle, the operating group, and management over the matter of space requirements. The feasibility of trading the electronic area for our area next to it, which was being used for instrument storage, was pointed out. The main concern of the user group was that they be given more space than we were willing to trade. They felt they had been deprived of space previously. An agreement was finally reached after two weeks of negotiations.

FEASIBILITY STUDY/LIST OF PRICES AND SOURCES OF EQUIPMENT

The Quality Circle decided to try to anticipate as many questions as possible which may be asked during the management presentation and to have all the answers ready. These would be incorporated into sub-topics of the future management presentation. We did all the leg work for researching costs and suppliers of equipment and fixtures. A detailed list was prepared which included each item, fixture and equipment cost, and the supplier. We interfaced with the Laboratory's Engineering Department and asked them to do a feasibility study of our plan. The feasibility study included a breakdown of projected labor and construction costs. The engineer's feasibility/cost study revealed that our project would cost approximately forty thousand dollars.

RESEARCH AND DOCUMENTATION

The members of the Quality Circle felt that group records would need to be reviewed, pertinent data extracted, and presented in a meaningful way.

Through brainstorming it was decided that the data necessary for our presentation included census figures for the last seven years 1979 to 1985, number of personnel needing decontamination for the three year period 1983 to 1985, and records of past incidences documenting the inadequacy of the present facility and the need for a new one.

A Hewlett Packard 250 computer and plotter were used to produce bar and line graphs of census and decontamination data used in our management presentation. Transparencies of the graphs were used as visual aides and hard copies were included in the presentation pamphlet which was distributed to all managers present.

From group records, a memo written by a former supervisor was obtained of an incident in 1983. This memo detailed the inadequacy of the facility, the need for a remodeled area, suggestions for fixtures and equipment, and the design of a new decontamination room.

MANAGEMENT PRESENTATION & RESPONSE

At the time of the management presentation the Quality Circle had nine members. We decided that each member should take a sub-topic and prepare his or her part for the presentation. The sub-topics for the presentation were: the introduction, the old floor plan/crowded space, research of site population and past occurrences, bargaining for adjoining space, new floor plan, feasibility study/list of supplies, discussion of past contamination occurrences, statement of need, and the letter written in 1983 documenting the need for possible new design.

In preparation for the management presentation, members of the Quality Circle made several visual aides which helped make a more convincing argument. Slides of the present decontamination room were taken which showed the crowded conditions and inadequate equipment and fixtures. We prepared several graphs which were presented in viewgraph form to enable us to discuss the proposed changes during the management presentation. The list of supplies and equipment and the feasibility study were also put into viewgraph form.

The Circle decided in a meeting that the presentation would be limited to 30 minutes with additional time for questions. Two rehearsals of the presentation were performed to allow us to feel comfortable with our individual parts and to get our timing right since we wanted the whole presentation to flow between nine speakers. At the suggestion of our facilitator, the management presentation was videotaped by the Laboratory's Training Office for use in training other Quality Circles in the skills of an effective presentation. Immediately after the last speaker we were congratulated on the professional work he had done in researching and design of the new decontamination rooms. The facility manager also made the statement that the forty thousand in funds would be found to make the changes.

FOLLOW-UP PURCHASING AND CONSTRUCTION

Shortly after the managers approved our plan we were asked to complete the purchase orders necessary to acquire all the fixtures and equipment for the new rooms. This entailed many hours of paperwork and interfacing with the Laboratory's purchasing group.

It was several months before construction actually began on the rooms. There have been many questions during construction which we have had to answer and occasionally an interpretation of design requirements or a minor change in the floor plan was required. This necessitated an almost daily contact between the Quality Circle members, the Facility Engineer, and the Craftsmen doing the construction.

At the present time construction is complete and we soon plan to dedicate the new facility to the former supervisor, now deceased, who in 1983 wrote a letter to management outlining the need, fixtures, and equipment necessary for a modern decontamination room.

REFERENCES

Connellee, Barbara, is an Administrative Staff Member with the Facility Management Group at the Los Alamos National Laboratory's Plutonium Facility. She served as the Facilitator for the Semper Securitas Quality Circle.

BIOGRAPHICAL INFORMATION

Aranda, Henry, is a Health Protection Technical Supervisor assigned to all plutonium processes at the Los Alamos National Laboratory's Plutonium Facility.

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Guillen, Edward, is a Health Protection Technician assigned to Fuel Pellet Research at the Los Alamos National Laboratory's Plutonium Facility.

Mosso, Jerilyn S., is the Circle Leader and a Health Protection Technician assigned to the Laser Isotope Separation process at the Los Alamos National Laboratory's Plutonium Facility.

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Romero, Pablo O., is a Health Protection Technician assigned to Metal Preparation and Purification at the Los Alamos National Laboratory's Plutonium Facility.

Smith, Floyd E., is a Health Protection Technician assigned to Material Management at the Los Alamos National Laboratory's Plutonium Facility.

Speer, Louis C., was a Health Protection Technical Supervisor assigned to all plutonium processes at the Los Alamos National Laboratory's Plutonium Facility. He has since retired and relocated to Oklahoma.

Treadaway, W. Allen, is a Health Protection Technical Supervisor assigned to all plutonium processes at the Los Alamos National Laboratory's Plutonium Facility.

Pella Rolscreen Quality Circles: Der Waal Bangers present, Total Quality Control Begins With Me.

Shirley Sneller
Quality Circle Coordinator

Rolscreen Company of Pella, Iowa, manufacturers of Pella Windows and Doors, has long had a reputation of product excellence and service to its customers. Continually searching for ways to enhance product quality and improving customer service, the company has instituted Just-In-Time in its area through a series of three dynamic projects. The first dealt with reducing operator set-up time, the next aimed at creating quality at the source, and the final project involved implementing Statistical Process Control (S.P.C.).

This presentation summarizes each of these projects to give a total picture of how any manufacturing organization could set about implementing these concepts. You will see how Total Quality Control can be achieved by developing quality manuals, quality models, and quality gauges.

One of the highlights of this presentation is a video tape which takes you on a tour of the department while its members do the Sash Prep Hustle.

BACKGROUND

Der Waal Bangers is one of 50 Quality Circles within Rolscreen Company. It was formed in June of 1982, and consists of ten members who work in the Sash Prep Preparation department. This department takes dimensional lumber and converts it into finished sash parts ready for assembly. This includes shaping ends and sides, inserting breathers and strikes, dipping wood parts for preservation, priming, drying and inspecting.

This circle has made six Management Presentations during which 21 major projects and 202 quick kill items were presented and accepted. Quick kill items are problems that circle members can solve, without management approval, in a relatively short time by themselves or by writing work orders.

As a result of the major projects and quick kills, Der Waal Bangers have improved the quality of their product and their worklife, reduced set-up time, and realized a projected cost savings of over $200,000.

In August of 1986, Der Waal Bangers competed in the Rolscreen Quality Circle Fair. This consisted of 50 circles making management presentations before a selected group of judges. The winning circle attends the IAQC Annual Spring Conference in New Orleans in 1987. Der Waal Bangers won this competition.

PRESENTATION
TOTAL QUALITY CONTROL BEGINS WITH ME

We would first like to take you on a tour of our department. We have prepared a video tape to help explain the processes in our department and to introduce the members of the Der Waal Bangers Quality Circle.

Sash Prep Hustle

His name's Barry, this is where it all starts,
His job here is to put ends on the parts.

This is Dave and he's Laverne.
They can really make these moulders burn.

They take the wood, and feed it through,
To make the sash part straight and true.

We drill and insert with this machine,
By the way, she's Raylene.

** We're sash prep, we put it on the line,
And now we're doin' it Just-In-Time.
The assembly line calls, they're in a tussle.
We start doin' the sash prep hustle.

To make sure we get a snug fit,
We put it in here to rout the ends a bit.

Right the first time, that's the plan.
Everyone knows that Gary can.

After them, it comes to Les.
He inserts the strikes and does the best.

Then to make sure that the wood lasts,
He moves it on to the dip tank fast.

Once repaired, it's into the tank.
Sue says you can take it to the bank.

** CHORUS

When they dry, it's Rob and Don
That we trust to put the paint on.

They paint the ends, and the backs too.
Then there's one more thing we have to do.

Once the parts have come this far,
Darlene checks the quality they are.

Clad or Wood, then out they go.
Their next stop, a "Pella Window".

My name's Kelley, and you can see,
That we're all one "Proud Family".

** CHORUS

Total quality is no problem now-
Just listen up, We'll tell you how.

We're not here to give you no tussle,
We're all here to do the SASH PREP HUSTLE.

THE CUSTOMER
Pella
• IS BOSS! •

BRAINSTORMING AND PROBLEM SELECTION

Der Waal Bangers brainstormed for a project in their work area. They identified 32 possible projects. The circle voted on these ideas and identified 17 Quick Kill items and one major project: "Need an Easier, Faster Way to Check Quality."

This project was selected as it is the department's goal to satisfy the customer by doing parts right the first time. The objective of this Quality Circle is to have zero defects in the Parts Preparation Department.

BRAINSTORMING FOR PROJECT #6

1. No clear definition of "wood" quality.
2. Guard rail by glazing block router needs to be bolted to floor. (Q.K.)
3. Need more brooms. (Q.K.)
4. Broken cabinets need to be replaced. (Q.K.)
5. Need extra sets of prints for LD's & TD 5/8. (Q.K.)
6. Feather left on glass stops by end cut router.
7. Wood quality parts are being used for clad.
8. Most salvage parts are being used for clad.
9. Quality characteristics are different between Area II and III.
10. Too many obsolete prints. (Q.K.)
11. Conveyor guide broken off #11 moulder. (Q.K.)
12. Chip repairs on ends of glass stops fall out when assembled.
13. Air pressure gauge on #11 moulder hot glue pump doesn't work. (Q.K.)
14. Our quality books are getting outdated.
15. Lack of knowledge about repairs in hidden areas (under weatherstrip).
16. Paint and water getting on masks. (Q.K.)
17. Paint lines are a mess.
18. E.K. Router jig parts are unorganized. (Q.K.)
19. Need brooms and dustpans closer to the 5-Stations. (Q.K.)
20. Emergency shut off needed on accumulation table at #10 moulder. (Q.K.)
21. Need new frames at the dip tank. (Q.K.)
22. Tackers on moulders are unreliable.
23. Need a material handler for the dip tank.
24. Need a quick release on guard on salvage saw conveyor. (Q.K.)
25. Need a new edge on the repair table at the dip tank. (Q.K.)
26. Too much chip out on clad lip of stiles.
27. Air line keeps falling on floor at sash processor. (Q.K.)
28. Need chip breakers made for new ECR to run salvage with strikes.
29. Need a signal on ECR to show if rout is short. (Q.K.)
30. Permanent fence for bottom rail on Paint Line #5.
31. Salvage is stacked in our area too long.
32. Need an easier, faster way to check quality characteristics. (Project)

BRAINSTORMING

IMPLEMENT IDENTIFY
QUALITY
Pella
CIRCLES
RECOMMEND ANALYZE
QUICK KILLS

PROJECT #6 - QUALITY MADE EASY

QUICK KILLS AND SOLUTIONS

1. Paint and water getting on mask.
   - Wiper was added to wipe off mask.
2. Organize parts for the jigs on E.K.Router.
   - Jigs and parts were organized & labeled.
3. Need a permanent fence for middle rail on #5 P.L.
   - Had an adjustable fence made.
4. Extra set of prints for LD and 58.
   - Extra set of prints were made for each machine.
5. Need more brooms.
   - More brooms were ordered so every machine had one.
6. Signal on end router.
   - Signal was made to let operator know if they are making a right cut.
7. Air line on sash processor keeps coming loose.
   - Air line was fastened up with conduit clamps.
8. Guard wired up to conveyor on salvage saw.
   - Guard was put on correctly with bolts.

9. Emergency shut off needed on accumulation table on #10 moulder.
   - An emergency shut off was installed.

10. Air pressure gauge doesn't work on #11 moulder hot glue pump.
    - A new one was ordered and put on.

11. Wood edge on repair table at dip tank keeps coming off.
    - The wood edge was replaced with a metal edge.

12. Need new frames at dip tank.
    - New frames have been made.

13. Need brooms and dust pans closer to 5-Stations.
    - Brooms and dust pans were moved to a closer spot.

14. Guard rail by glazing block router needs refastening.
    - Guard rail was refastened.

15. Replace broken cabinets.
    - Cabinets were replaced.

16. Obsolete prints.
    - Prints were updated.

17. Conveyor guide broke off #11 moulder.
    - Guide was fixed.

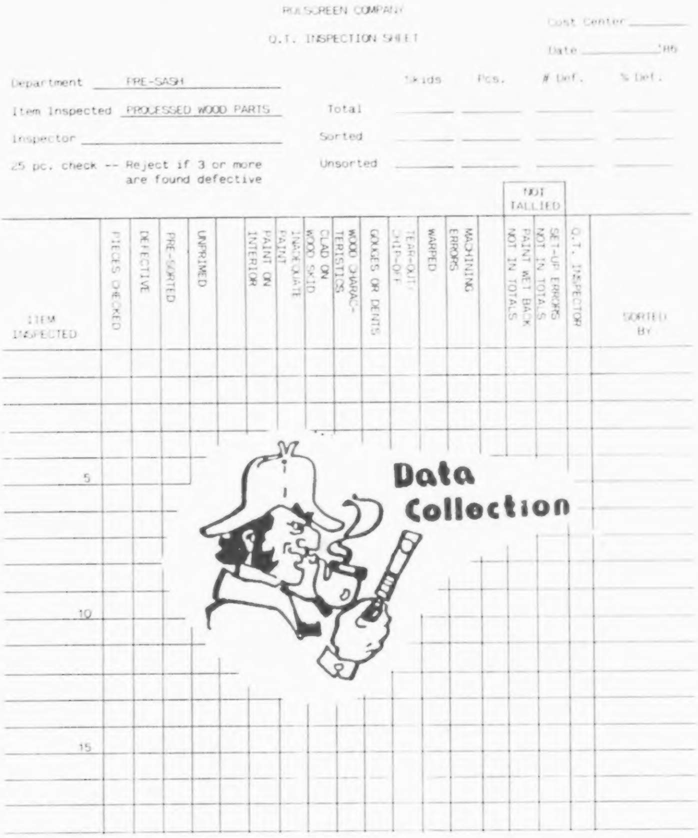
PRESENT SITUATION

Quality Specifications are difficult to understand. Quality books and sample boards are outdated. Operators do not have access to quick quality guidelines.

DATA COLLECTION AND CHECK SHEET

Data Collecting Process:

- Step 1. We toured the sash assembly lines (this is where parts go after leaving our department), to see what quality problems they had with our finished part.
- Step 2. We met with the Sash Assembly Quality Circle twice to discuss ways to improve situations.
- Step 3. We then met with the Quality Technology departments of parts area and assembly area to discuss quality specifications.
- Step 4. We compiled data by using the Quality Control Audit Sheets. (Figure #1)



ROLSCREEN COMPANY

Q.T. INSPECTION SHEET

Cost Center ________

Date __________ '86

Department PRE-SASH

Item Inspected PROCESSED WOOD PARTS

Inspector ______________

25 pc. check -- Reject if 3 or more are found defective

	Skids	Pcs.	# Def.	% Def.
Total				
Sorted				
Unsorted				

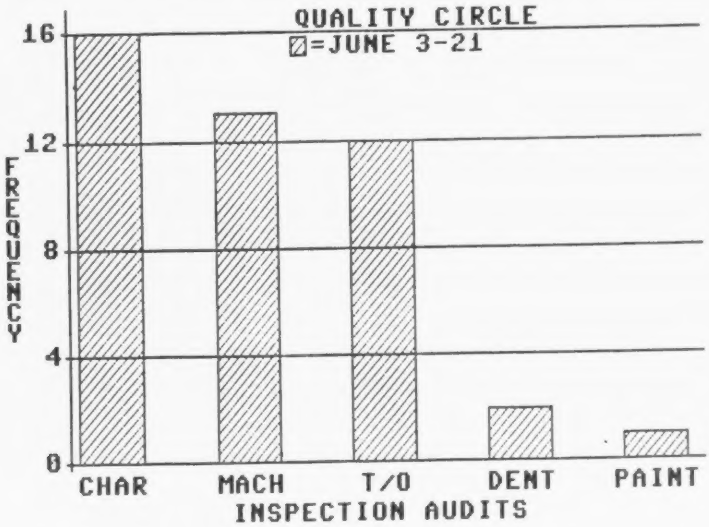
ITEM INSPECTED	PIECES CHECKED	DEFECTIVE	PRE-SORTED	UNPRIMED		PAINT ON INTERIOR	INADEQUATE PAINT	CLAD ON WOOD SKID	WOOD CHARACTERISTICS	GOUGES OR DENTS	TEAR-OUT/CHIP-OFF	WARPED	MACHINING ERRORS		NOT TALLIED PAINT WET BACK NOT IN TOTALS	NOT TALLIED SET-UP ERRORS NOT IN TOTALS	Q.T. INSPECTOR	SORTED BY
5																		
10																		
15																		

(Figure #1)

PARETO CHART

The following pareto chart (Figure #2) was constructed from the data sheet. This revealed the following problems:

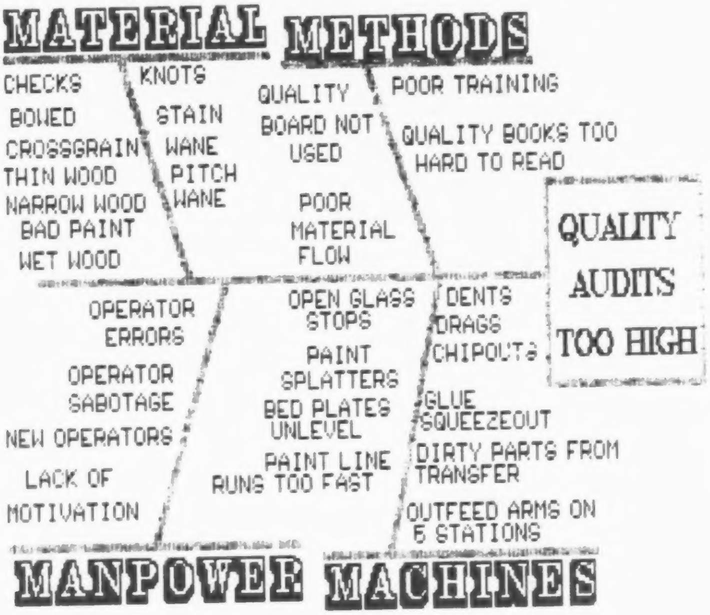
1. Too many wood characteristic defects were reaching the paint line.
2. Also, too many machine related-defects were processed through the department.
3. Many of the machine defects were tear out.



(Figure #2)

BASIC CAUSE AND EFFECT

After constructing the pareto chart the circle realized there was a serious problem with Quality Audits being too high. The next step was to go fishing to find the cause of this problem. The following is the result of the cause and effect analysis: (Figure #3)


MATERIAL
METHODS
CHECKS
BOWED
CROSSGRAIN
THIN WOOD
NARROW WOOD
BAD PAINT
WET WOOD
KNOTS
STAIN
WANE
PITCH
WANE
QUALITY BOARD NOT USED
POOR MATERIAL FLOW
POOR TRAINING
QUALITY BOOKS TOO HARD TO READ
QUALITY AUDITS TOO HIGH
OPERATOR ERRORS
OPERATOR SABOTAGE
NEW OPERATORS
LACK OF MOTIVATION
OPEN GLASS STOPS
PAINT SPLATTERS
BED PLATES UNLEVEL
PAINT LINE RUNS TOO FAST
DENTS
DRAGS
CHIPOUTS
GLUE SQUEEZEOUT
DIRTY PARTS FROM TRANSFER
OUTFEED ARMS ON 5 STATIONS
MANPOWER
MACHINES

(Figure #3)

SOLUTIONS

Through further brainstorming and discussion of our cause and effect diagram, the solutions to the problem,"Need an easier, faster way to check quality," were found to be simple.

1. We first updated all Quality Books by revising the layout of the book. (Figure #4)
2. Made a chart of maximum allowable surface characteristics and added this to the Quality Books. (Figure #5)
3. Designed a handy visual guide (a template) for quick reference of allowable characteristics. (Figure #6)
4. Updated the Quality sample board. (Figure #7)
5. Created pictorial machine set-up display to aid operator in attaining correct and quick set-ups.
6. Solved seventeen quick kill items.

NEW FORMAT FOR QUALITY BOOK KEY

(Figure #4)

Cross Grain
CG 1. No Cross Grain within 2" of the end
CG 2. No layered Cross Grain

Tear Out
TO-1. Tear out on glass stop side of stiles can be 2" long and 3/8" wide. Plus another 1" x 1/8" towards the middle.
TO-2. Tear outs on glass stop side of rails can be 1" long & 1/8" deep.
TO-3. 3/8" long by width of part can be missing on rails.
TO-4. 1/8" deep & 1" long tear out is allowed on ends.
1/8" deep and 4" long is allowed in the middle.
TO-5. 13/32" x 1" tear out on stiles on 2% of load. After stop 1/8" x 1".

MAXIMUM ALLOWABLE SURFACE CHARACTERISTICS

	Interior		Exterior	
Defect	Exposed	Panel Rabbet	Exterior	Interim Exposed
Sound Knots	1/16" Solid 1/4" Repaired	1/16" Solid 1/4" Repaired	Smooth & Sound	1 1/2" Sound
Solid Dry Pitch Pockets Dents, Chip-Outs, ETC.	1/16" x 1/2" or Equivalent 3/16" x 1 1/4" Repaired	1/4" x 2" Sound Defect or Repair	Dents and Chipouts 1/16" x 1/2" or Equivalent	1" x 6"
Checks	1 1/2" long or Repaired 4" Maximum	1 1/2" long or Repaired 4" Maximum	1 1/2" long or Repaired 6" Maximum	6" Long
Blue & Brown Stain	Light 1" Square or Equivalent	Light 1" Square or Equivalent	No Limit	No Limit

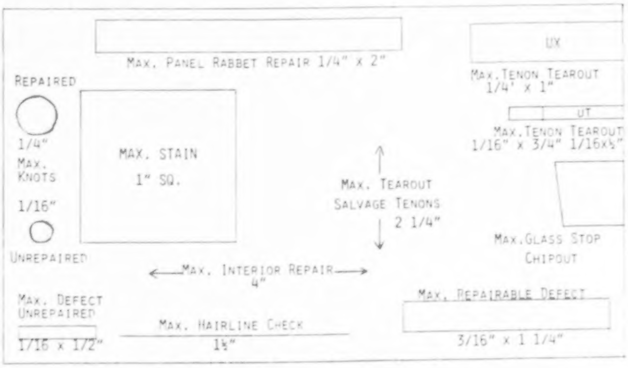
WARPAGE SPEC SHEET

(Figure #5)

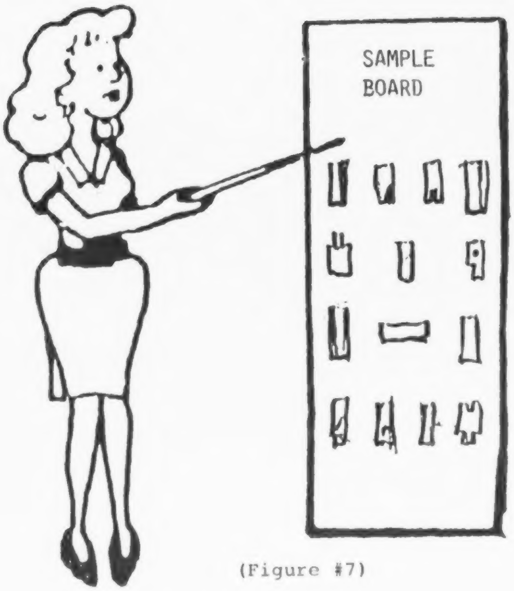
Bow "IN" means the center of the part is closer to the room than it's ends.
Camber "IN" means the center of the part is closer to the glass than it's ends.

	Allowable Bow		Allowable Camber	
Product & Size	IN	OUT	IN	OUT
120" Sash	3/16	1/2	3/4	3/32
74" Sash	5/64	7/32	7/16	1/32
71" UX	1/16	3/16	3/8	1/32
71" UC	1/16	5/32	3/8	1/32
63" UX	3/64	3/16	3/8	1/32
63" UC	3/64	5/32	3/8	1/32
57" UX	3/64	5/32	5/16	1/32
57" UC	3/64	5/32	5/16	1/32
51" UX	1/32	1/8	1/4	1/32
51" UC	1/32	1/8	1/4	1/32

DER WAAL BANGERS
QUALITY TEMPLATE


Max. Panel Rabbet Repair 1/4" x 2"
UX
Max. Tenon Tearout 1/4' x 1"
UT
Max. Tenon Tearout 1/16" x 3/4" 1/16x½"
Repaired
1/4"
Max. Knots
1/16"
Unrepaired
Max. Stain 1" SQ.
Max. Tearout Salvage Tenons 2 1/4"
Max. Glass Stop Chipout
Max. Interior Repair 4"
Max. Defect Unrepaired
1/16 x 1/2"
Max. Hairline Check
1½"
Max. Repairable Defect
3/16" x 1 1/4"

(FIGURE #6)



(Figure #7)

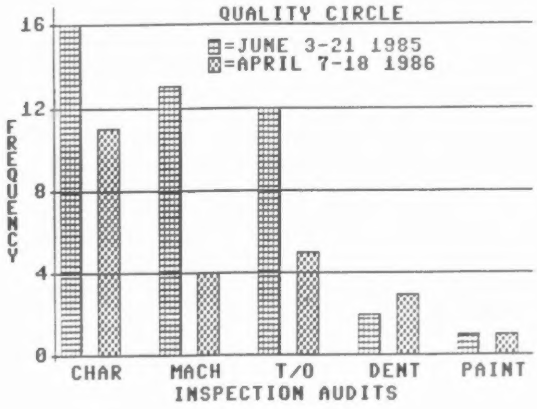
COST OF SOLUTIONS

The work on the Quality Books, Quality Board, templates and machine set-up display was done during regular circle meetings, so the cost of implementing this project was very minimal.

SUMMARY

Der Waal Bangers Quality Circle has an objective of zero defects and making parts right the first time. With the implementation of these solutions they have a better understanding of Pella Quality as it relates to the finished product and believe that "Total Quality Control" really does begin with me. This is why our motto is "A Proud Family of Tradition, Doing it Right the First Time."

This project resulted in significant decrease of defects found in our quality audits as can be seen in our comparative pareto chart. (Figure #8)



(Figure #8)

QUALITY CIRCLE PROJECT ACCEPTANCE REPORT

DATE: June 9, 1986
QUALITY CIRCLE: Der Waal Bangers LEADER: Kelley Lacina

CIRCLE MEMBERS:	Laverne De Boef	Darlene Marshall
	Don Pettyjohn	Dave Mason
	Raylene Bechtel	Gary Verploegh
	Robi Wallace	Lester Vroegh
	Sue Doty	

TITLE OF PROJECT: Quality Made Easy (Update Quality Book - Quality Template)

ACTION THAT NEEDS APPROVAL:

1. Updated Quality Book	1. Understandable Quality specifications
2. Made chart of maximum allowable characteristics	2. Easy access to Quality Standards
3. Made a template of maximum allowable characteristics	3. Quality made easy

These projects do not require approval, but we would like any suggestions or comments you may have.

INDIVIDUALS WHO NEED TO APPROVE:

(Individual)	(Accepted)	(Not Accepted)
Superintendent, Bill Riherd		
General Foreman, Dick Smith		

COMMENTS:

Please submit this Project Acceptance Report to the Quality Circle by July 7, 1986 (3 weeks after Management Presentation).

Thank You!

MANUFACTURING
Pella
J-I-T
EXCELLENCE

PAST PROJECT UPDATE

"REDUCING SET-UP TIME"

For our fifth Management Presentation we submitted for approval several set-up reduction projects. Since that time every project submitted has been implemented. The majority of the projects focused on our Sash Moulder's lengthy set-up time, which was reduced from two and one half hours on the average, to one hour or less. We also created tool boards for quick access to our equipment. This project has significantly reduced our areas set-up downtime and has enabled us to move smoothly into our new Just-In-Time program.

NEXT PROJECT

The quality awareness generated from our current project has created a willingness to continue our Quality Improvements in more detail. The group has elected to be trained in Statistical Process Control to furthur enhance the quality of our product. We expect to learn the finer points of maintaining controlled quality as a result of this training. This training will also aid our department in reaching its objective of zero defective parts leaving our area to be assembled.

QUALITY CIRCLE COORDINATOR AND MEMBERS

Coordinator: Shirley Sneller

Member: Kelley Lacina
Title: Department Manager/Circle Leader

Member: David Mason
Title: Sash Moulder Technician/Circle Secretary

Member: Donald Pettyjohn
Title: Paint Technician

Member: Laverne De Boef
Title: Sash Moulder Technician

Member: Sue Doty
Title: Production Coordinator

Member: Robi Wallace
Title: Painter

Member: Lester Vroegh
Title: Sash Processing Machine Operator

Member: Gary Verploegh
Title: Sash Processing Machine Operator

Member: Darlene Marshall
Title: Sash Processing Machine Operator

Member: Raylene Bechtel
Title: Sash Processing Machine Operator

Dollar's Saved on Automobile Weather Strip End Cut Waste

Delbert's Devil's
Quality Circle

Sheller-Globe Corporation Keokuk Iowa Plant

Our Company manufactures the weather stripping that is applied around doors, windows, trunks and wind shields of many types and models of cars. The raw material is ran thru a die extruded to the proper specifications, as rubber has to cure before using. All weather strips are cut six inches over spec to allow for skrinkage. Skrinkage is complete after 24 hours and the strips are cut to correct length. This method wastes four inches per strip.

Listed below are some of the ideas we came up with while brainstroming for a project. From these we selected End Cut Waste.

Brainstorming

STANDARDS LENGTHS

SHRINKAGE

REVISING BLOW GUNS

SYCHRONIZE CLOCKS

END CUT WASTE

BETTER LIGHTING

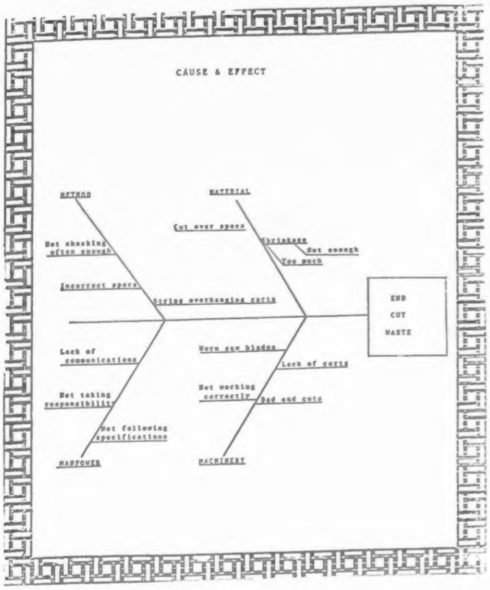
STORAGE

FIX CHARTS

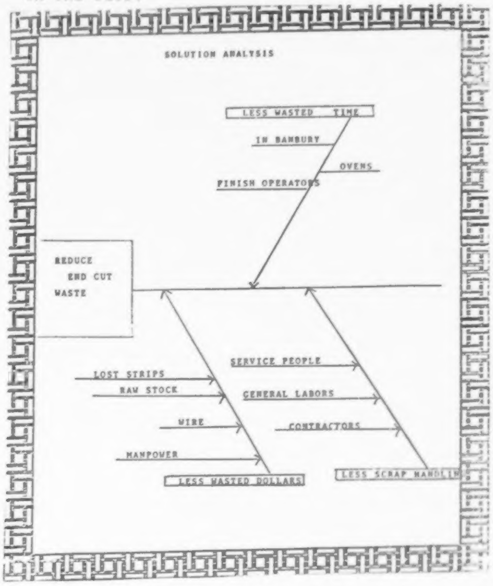
FACTORY RETURNS

NEW SCRAP DUMPSTERS OR TRUCKS

From the cause to effect diagram we noticed the specifications seemed to be the biggest contributor to the problem.


CAUSE & EFFECT
METHOD
Not checking often enough
Incorrect specs
Strips overhanging carts
MATERIAL
Cut over specs
Shrinkage
Not enough
Too much
END CUT WASTE
Lack of communications
Not taking responsibility
Not following specifications
MANPOWER
Worn saw blades
Lack of carts
Not working correctly
Bad end cuts
MACHINERY

Solution analysis gave us an insight as to how much time and how many dollars could be saved if we could eliminate the excessive length on end cuts.


SOLUTION ANALYSIS
LESS WASTED TIME
IN BANBURY
OVENS
FINISH OPERATORS
REDUCE END CUT WASTE
LOST STRIPS
RAW STOCK
WIRE
MANPOWER
LESS WASTED DOLLARS
SERVICE PEOPLE
GENERAL LABORS
CONTRACTORS
LESS SCRAP HANDLIN

We kept check sheets to record all lengths, as to what we actual needed, compared to what we were getting.

	E.P. - 87296		E.D. - 1046			Dept 15 spec	121.2
	123.9	125.8	123.9	126.1	125.7	126.2	125.3
	124.6	125.8	124.6	125.8	126	126.7	125.3
	125.3	125.9	124.5	126.1	125.6	126.0	125.1
	125.8	126.1	125.8	126	125.5	126.0	125.6
	125.4	125.8	125.4	126.1	125.7	126.8	124.6
	125.4	125.9	125.4	125.8	125.8	126.7	125.3
	125.4	125.7	125.4	125.7	125.8	126.8	126.7
	125.6	126.0	125.4	125.8	125.6	126.8	124.9
	126.8	126.0	125.3	125.7	125.7	126.9	125.1
average	125.6	125.9	125.1	125.9	125.9	126.8	125.0
overall average		125.4 or three inches to long					

	E.P. - 87292		E.D. - 1046			Dept.15 spec	130.4
	135.2	135.8	135.6	134.6	135.1	135.4	135.6
	135.4	135.9	135.8	134.6	135.1	135.3	135.4
	135.1	135.1	135.6	135.5	135.3	135.2	135.5
	135.2	135.4	135.7	135.4	135.4	135.3	135.4
	135.5	135.6	135.6	135.2	135.3	135.2	135.4
	135.3	135.5	135.6	135.8	135.4	135.3	135.1
	135.1	135.8	135.6	135.3	135.1	135.3	135.0
	135.1	135.5	135.4	135.4	135.3	135.2	135.0
	135.2	135.6	135.8	135.4	135.4	135.1	135.2
	135.2	135.6	135.8	135.0	135.5	135.1	135.0
average	135.2	135.6	135.7	135.2	135.3	135.2	135.1
overall average		135.4 or five inches to long					

	K.P. 87140			K.D. 907
	153.1	153.6	152.9	152.7
	152.9	153.4	152.7	152.7
	153.1	153.4	153.0	152.9
	152.8	153.4	153.4	152.8
	153.0	153.6	152.7	152.7
	153.1	153.4	152.9	152.9
	153.0	153.4	153.0	152.9
	153.1	153.4	152.6	152.4
	153.0	153.4	152.8	152.7
	153.0	153.4	152.7	152.9
average	153.0	153.4	152.8	152.8

overall average 153.0 or 4.6 inches to long

	K.P. 87050		K.D. 907
	157.1	157.2	
	157.2	157.2	
	157.6	156.8	
	157.4	157.4	
	157.5	157.1	
	157.4	157.6	
	157.6	157.7	
	157.5	157.6	
	157.3	157.2	
	157.3	157.5	
average	157.4	157.4	

overall average 157.4 or 3.2 inches to long

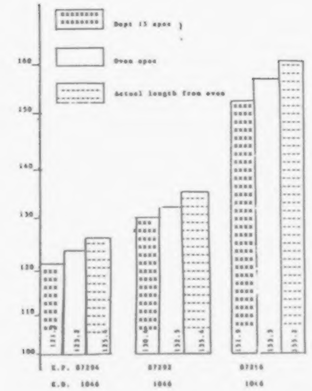
	K.P. - 87296		K.D. 1046	dept. 15 spec 151.9
	154.8	155.6	155.5	
	155.0	155.6	154.4	
	155.0	155.7	154.6	
	154.9	155.6	154.4	
	155.1	155.5	154.6	
	154.8	155.6	155.7	
	155.1	155.5	155.9	
	154.9	155.2	155.4	
	155.4	155.2	155.2	
	154.9	155.5	155.1	
average	155.0	155.5	155.1	

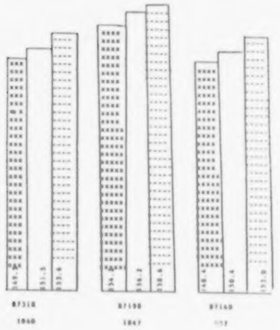
overall average 155.2 or four inches to long

	K.P. 87318		K.D. 907		dept.15 spec		149.5
	153.5	154.0	153.8	153.6	153.5	153.2	153.4
	153.6	153.7	153.8	154.0	153.6	153.4	154.0
	153.7	153.7	153.6	153.7	153.5	153.4	153.6
	153.6	154.0	153.4	153.8	153.5	153.4	153.3
	153.6	153.8	153.4	154.0	153.3	153.2	153.5
	153.6	154.0	153.4	153.9	153.5	153.3	153.3
	153.5	154.0	153.7	153.8	153.4	153.7	153.3
	153.7	154.0	153.7	153.8	153.3	154.0	153.5
	153.5	153.8	153.8	153.8	153.5	153.3	153.5
	153.7	154.0	153.8	154.0	153.4	153.2	154.0
average	153.6	153.9	153.6	153.8	153.4	153.4	153.5

overall average 153.6 or 3.9 inches to long

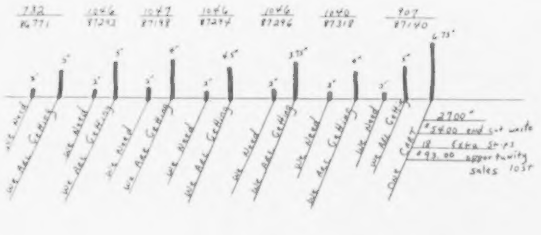
From the check sheet we made a bar graph revealing the same information, but could be read at a glance.





The week of April 21, 1986, the operator kept the actual end which she cut off. Making a bar chart for comparison strips which we will call sales opportunity lost.

Samples taken during week of April 21-28 1986



Once again, we made a check sheet to record each strip cut, how many were cut that week, the extra inches and the money lost. The numbers of 2¢ per inch was obtained from our accounting department.

END CUT WASTE PER WEEK

EP	SCHEDULE	EXTRA INCHES	TOTAL EXTRA INCHES	DOLLARS PER EP
87294	8,000	3	24,000	$480.
87296	4,000	2	8,000	$160.
87292	8,000	3	24,000	$480.
87198	1,000	2	2,000	$40.
87318	8,000	4	32,000	$640.
87140	13,000	3	39,000	$780.
86771	4,000	2	8,000	$160.
			137,000	$2,740.

These figures were based on $.02 an inch.

The number of pieces per EP was taken from a master schedule for Department 15.

Take the total amount of wasted end cuts, if ran consective we could obtain 1172 additional strips with the selling price of $4896.00.

CHECKSHEET

EP	EXTRA STRIPS	DOLLARS PER STRIP	OPPORTUNITY SALES LOST
87294	396	$3.53	$1,398
87296	52	$4.16	$216
87292	184	$3.77	$694
87198	13	$3.62	$47
87318	214	$4.29	$918
87140	261	$5.16	$1,347
86771	52	$5.31	$276

TOTAL EXTRA STRIPS 1172 OPPORTUNITY SALES LOST $4896.00

Information on cost per strip was furnished by the accounting department.

If we figure this on a yearly basis we will save $137,000 in end cut waste and gain $244,800 in sales opportunity.

TOTAL WASTE PER WEEK IN END CUTS (2¢ per inch)	$2740.00
	+
OPPORTUNITY SALES LOSS PER WEEK	- $4896.00
	$7636.00
	X 50 wks.
OPPORTUNITY SALES & SAVINGS PER YEAR	$381,800.00

Employee Awareness of Plant Emergency Procedures

Sharon Miller
The Trane Company, Dealer Products Group, Tyler, Texas 75711

The Trane Trackers Quality Circle was formed in April of 1985. It is one of the first all-salaried circles within The Trane Company, Dealer Products Group of Tyler, Texas. Due to various cross-functional representation within the circle, and with the joining of minds as an organized group, we pursued a subject that would draw interest and concern within our company population. In keeping with the idea of employee safety, and striving to avoid potential injuries, we endeavored to promote a company-wide employee awareness program of plant emergency procedures. Recognizing the lack of knowledge and state-of-confusion employees have of procedures during life-threatening situations, the circle utilized various resources as key drivers in developing a workable program which was not only taken seriously but subsequently has received enthusiastic acceptance. A follow-up program was established to monitor the effectiveness of the various resources used in making this project a success.

Background

After many comprehensive brainstorming sessions, we recognized the importance of employee familiarity of emergency procedures during life-threatening situations.

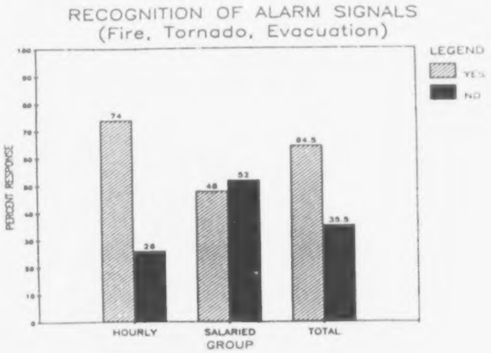
Based on the findings of these sessions we began to pursue this project in-depth with verification that a problem actually existed within our company.

The groundwork began with the development and administration of a multiple choice survey to hourly and salaried employees to identify their knowledge of our company's emergency codes and procedures. In developing the survey we followed the principle that the easier a survey is to complete, the greater the likelihood that participants will return it. Using a random sampling table to determine which employees would be surveyed, we then circulated the survey sheets to 20% of the employees of each area.

Once the results of the survey were tabulated, our theory was confirmed. There was a definite lack of awareness and a state-of-confusion over emergency procedures within our company. In addition to the survey, audits were conducted throughout the company to see if our emergency procedural diagram was displayed in immediate work areas to educate employees in recognizing the emergency signals and procedures in the event of an actual emergency.

Just as with the survey results, the audits also confirmed our theory, proving that our present system was inadequate and that a workable system needed to be implemented. Therefore, the objective of our Circle would be to impose a company-wide employee safety awarness program, including a system to aid in reducing the possibility of potential injuries.

With added insight gained from the survey and audits, we continued our probe by contacting other companies within our community to survey their emergency procedures and practices. Due to the universal concern for employee safety, these businesses were very receptive to our questions.



Striving for thoroughness, we invited Lieutenant Paul Kelly of the local fire department to conduct a question-and-answer session during one of our weekly Circle meetings. It was during this meeting that collective data was obtained on an emergency voice system. After lengthly deliberation, we decided not to pursue this expensive system at the present time, however, during our presentation, we would ask that management give it consideration for future implementation.

Once we were satisfied that all avenues had been explored, we began the development of diagrammed emergency signs that would visually illustrate appropriately established exits and tornado-safe areas. The enhancement of these signs would promote visual awareness and demonstrate that the company had a geniune concern for employee safety.

Upon completion of the signs, it was understood that the Circle members would work closely with the appropriate managers and our safety engineer in coordinating feasibility studies as to the actual placement of the signs. Realizing the many variables involved, assessments of production equipment location, high volume traffic areas, and employee visibility would be considered.

We felt that the development of the signs was a significant beginning, however, realizing that other resources could easily be incorporated into this project, we decided to use the digital message center in our cafeteria by programming it to display a read-out of the emergency codes. In using the message center it would act as a continuous educational device.

With a strong commitment to saturate the company with the knowledge of emergency procedures, we also suggested that an audio tape of the actual codes be played during informative meetings to reinforce our initial idea. It was also agreed that the current emergency procedural diagram would be published every quarter in our company newspaper.

Conclusion

Completion of this project will yield considerable intangible savings to The Trane Company through the reduction of potential loss of life and injury as well as improved employee attitudes due to the company's concern for individual safety.

During the presentation, it was brought to management's attention that as far-fetched as the scenario of a diaster within our company appeared, it was possible that the "unthinkable" could easily become the "thinkable". The company needed to assume a greater responsibility for injury/survival protection for its employees.

Upon adoption of our project, we advised management that with the ongoing program of emergency procedures, the Circle would conduct a follow-up approximately six months later to see how effectively the project is working.

Not only was our project taken seriously and our recommendations adopted, enthusiasm was generated within management to continue studies of the emergency voice system for possible implementation.

"If theres a better way to do it, we'll track it down", a simple slogan that has yielded effective results for the Trane Trackers Quality Circle. As leaders in quality, we will continue to push forward in finding a better way to do it.

"If theres a better way to do it, we'll track it down", a simple slogan that has yielded effective results for the Trane Trackers Quality Circle. As leaders in quality, we will continue to push forward in finding a better way to do it.

Biographical Information

Jama Baskin, Secretary, Tyler Plant Operations/
Quality Control
Quality Circle Leader

Doris Jones, Secretary, Purchasing
Quality Circle Co-Leader

Beck Holian, Specialist Salaried Relations
Quality Circle Facilitator

Patty Gowen, Secretary, Employee Relations
Quality Circle Member

Carol Martin, Secretary, Materials
Quality Circle Member

Linda Bond, Secretary, Drafting
Quality Circle Member

Lynn Marsh, Secretary, Marketing Services & Product
Deployment
Quality Circle Member

Sharon Miller, Secretary, Manufacturing Engineering/
Shop Operations
Quality Circle Member

Sally Breen, Secretary, Human Resources
Quality Circle Member

Narita Hyter, Switchboard Operator/Office Services
Quality Circle Member

Metal Masters Use Quality Circle (QC) Tools To Achieve Department Objectives

Roger Bennett
Richard P. Kost
U.S. Army Combat Systems Test Activity (USACSTA), Aberdeen Proving Ground, Maryland 21005

The QC process at USACSTA provides the opportunity for anyone to nominate problems for the teams to consider in their problem selection phase. A team of metal workers, known as the Metal Masters, accepted such a nomination from their department manager and using QC techniques, resolved a major situation pertaining to security of their industrial shops complex.

I. INTRODUCTION.

The USACSTA is located at Aberdeen Proving Ground, Maryland. It is comprised of approximately 1200 personnel, with a ratio of 5:1 civilian to military, and has a mission of evaluating and testing equipment being developed for use by the military.

Participative management was initiated in the Command during 1984 in the form of a Quality Circles Program which has been gradually expanded to the current register of ten teams. This paper in intended to provide the reader with information pertaining to a recent project completed by one USACSTA circle.

The "Metal Masters" are a Quality Circle team comprised of employees who represent the machinists, welders, and sheet metal workers in the Technical Shops Branch of USACSTA. This branch is responsible for the fabrication of devices required to accomplish the testing of equipment being developed for use by the Military. The group was commissioned as a QC team upon completion of training during May 1984 and has tackled problems which range from "elimination of birds from their building" to "acquisition of cranes to enhance the shop lift capability."

II. BACKGROUND OF PROJECT.

The branch conducts its operation from a large structure which resembles a cross between an airplane hanger and a greenhouse. Numerous tools and metal processing machines are located throughout the complex. Although project security is continuously in effect, the installation security personnel determined that physical security had to be improved in two areas.

1st . . . Develop and install a double barrier system on all windows and doors from the ground level to a height of 12 feet.

2nd . . . Develop and implement a procedure for visitor control which will eliminate the shop access to unauthorized personnel.

The problem statement that the Metal Masters selected read as follows: "How to enhance security in the Technical Shops Industrial Complex?"

III. PROBLEM SOLVING METHODOLOGY.

The Metal Masters QC team accepted the challenge from the branch chief during January 1986. One of their initial actions was to obtain a clear vision of what had to be accomplished versus what they would like to accomplish. Clarity on this vision was provided to the team from the organizational security chief. Armed with this information, the data analysis process began.

Steps taken included the following:

A. The team used QC techniques such as brainstorming and cause and effect diagrams to determine the most significant contributor to the following security deficiencies:

1. Employees do not close the doors when they leave the building, especially during brief absences required to recover stock, accept deliveries or complete jobs.

2. Shop employees do not challenge unknown visitors.

3. The sole barrier to window entry was easily breakable glass.

B. Alternatives to the problem identified through brainstorming included:

Establish a visitor control point.

Hire security guard.

Establish a self-locking system.

Fence in the entire area.

Employees responsible to challenge visitors.

C. The recommended solution was articulated in the following statement: "Develop a security plan to accomodate access/egress for shop personnel and visitor control during duty hours and provide security that complies with the regulations during and after duty hours."

IV. An implementation plan was designed by the Metal Masters which addressed the deficiencies in a manner that satisfied the security regulations without placing hardships on the workforce.

1. ISSUE - Doors.

RECOMMENDED ACTION - Modify existing screen doors in a manner which would allow CODEX locks to be mounted. (Screens would always be closed, while the exterior doors would be opened during the warm weather months).

CURRENT STATUS - Modifications accomplished by branch personnel. CODEX locks purchased and installed during June 1986.

2. ISSUE - Windows.

RECOMMENDED ACTION - Fabricate and install metal mesh screens on the interior side of each of the 130 ground level windows (windows must have capability to open from the inside). Cover the exterior windows by spot welding chain link material to all the ground level windows.

CURRENT STATUS - Estimate of required materials submitted during June 1986. Approved by purchasing department waiting vendor response, June 1986. Estimated completion for window security is material arrival date plus 30 days. The labor will be provided by the QC team members and their department peers.

3. ISSUE - Visitor Control.

RECOMMENDED ACTION - A visitor control point was established at a single building entry point. Signs notifying shop visitors of the building entry procedures were carefully worded and designed in a manner which would attract attention.

CURRENT STATUS - Signs were locally fabricated and mounted in 7 areas of the building during June 1986. The visitor control point was designated as the main shop office. Shop supervisors were tasked to act as visitor control officers.

V. PROJECT BENEFITS.

- Physical Security deficiencies eliminated.
- Work disruptions significantly reduced.
- Implementation costs were reduced through use of in-house labor
- Security plan accomplished without placing hardships on the workforce.

VI. SUMMARY.

The confidence demonstrated by management in nominating this project for Quality Circle action was rewarded not only with a sound solution, but also with an economical and expeditious implementation. This success, by the results-oriented Metal Masters, is regarded as "exhibit A" in the case for managers to utilize all their assigned resources to accomplish departmental objectives.

BIOGRAPHICAL INFORMATION

Roger Bennett is a sheetmetal craftsman assigned to the Technical Shops Branch, USACSTA, Aberdeen Proving Ground, MD. He has been a member of the Metal Masters since they were commissioned as a Quality Circle team in 1984. In addition to team member training, he has completed the U.S. Army Management Engineering Training Activity (AMETA) QC Facilitator's Course and attended the 8th Annual Spring IAQC Conference. He is currently serving as the facilitator for the Metal Masters QC team.

Richard P. Kost is the Organizational Effectiveness Specialist for USACSTA. He has been affiliated with Employee Involvement as a trainer and facilitator for the Organizational QC Program since its inception in 1984. Additionally he has attended IAQC sponsored events such as the 8th Annual Spring Conference and the 1986 Fall Forum. He is a graduate of the U.S. Army Organizational Effectiveness Center and School, and received a B.S. Degree in Technology of Management from the University of Maryland and a M.S. Degree in Administration of Human Resources from Central Michigan University.

Starting And Expanding Quality Circles--A Startling View!

Donald L. Dewar, President
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Some "radical," but tried and proven ideas will be presented for starting or expanding Circles--vital information to help do it right the first time. Differences between Japanese and Western World start-ups and expansions will be identified and a common ground suggested. The relationship between Circles and TQC will be explored.

Introduction

Many factors must be considered when starting and expanding Quality Circles. This paper amplifies one particular area--voluntarism.

There is now unquestioned evidence that information obtained on the subject of voluntarism by the Lockheed Quality Circle investigative team, of which I was a part, was both incomplete and in error.

Another important aspect to be considered in regard to starting and expanding Quality Circles is the relationship between Total Quality Control (TQC) and Quality Circles. They are both linked, arm in arm, with the subject of voluntarism.

A Few Facts

To set the stage, let's look at a few facts:

Fact #1. A surprisingly high number of companies are either doing or investigating the concept of Company Wide Quality Control (CWQC).

Fact #2. Many (not all) of these companies have initiated Quality Circle activities. Tragically, only a small percentage have ever gotten beyond the five or six Circles they started as part of their pilot program.

Fact #3. Quality Circles are part of TQC. Dr. Kaoru Ishikawa, renowned worldwide as a TQC expert and also as the "Father of QC Circles," states succinctly, "A company does not have TQC unless it has QC Circles in operation. QC Circles represent approximately 40 percent of a company's TQC efforts."

Fact #4. TQC is company-wide and involves all employees in all departments. Quality Circles are the primary vehicle for the participation of many employees.

Fact #5. Both the Japanese and Americans say that Circles are voluntary. This is true for the U.S. However, Japanese Circles are not voluntary (by U.S. standards).

Fact #6. In companies practicing TQC, the only part of it that is likely to be voluntary is Quality Circles. Even "quality teams" that perform similarly to Circles are usually not voluntary.

Prediction

There will be unprecedented expansion in the number of Quality Circle members in the U.S., on the order of 10 million, during the next decade! Companies with long-running programs will breathe new life into them by initiating start-up of Quality Circles throughout their companies as a necessary part of the introduction of TQC into the way they do business. Other companies with neither TQC nor Quality Circles will embrace TQC. Its introduction will bring Quality Circles along as part of the package.

When one talks about a company having TQC, it is inconceivable that they would have only a pilot Circle activity going with five or six Circles. Instead, between 50 and 100 percent of the employees would be involved in Circle activities! Furthermore, there will be an increasing number of companies that will adopt an altered view of the voluntary aspect of Quality Circles.

So, when a company bites the bullet and decides to get into TQC for real, that commitment will include a massive expansion of their Circle activities.

Watch out, America. Quality Circles is in its infancy and the participative process is just beginning.

Which Comes First--TQC or Quality Circles?

Some managers are delaying the start of Quality Circle activities until TQC has been implemented in their organization. There are many examples to prove that TQC does not have to come first! Many companies that are implementing TQC got started by doing Quality Circles as a first step. Their successes provided the encouragement to move all the way into TQC.

Dr. Ishikawa states as follows in his recent book, What is Total Quality Control? The Japanese Way:

> "One of the premises in starting QC Circle activities is that TQC is being implemented in the company. In the past, companies have usually started teaching TQC first and then begun Quality Circle activities. Lately, however, small and medium enterprises begin with Circle activities and are then introduced to TQC afterwards. One can of course begin with Circle activities, but one must keep in mind that QC Circle activities are merely a part of an overall Quality Control program and cannot have separate existence from it."

The message I see from his comments is that any number of U.S. companies will be able to successfully "institutionalize" Circle activity as long as they proceed to involve their company in a Total Quality Control commitment.

Voluntarism and Quality Circles

The voluntary feature of Quality Circles has been a major retardant to expansion for many companies. Some U.S. firms are solving this problem by removing the voluntary feature. One, an insurance company never had it on a voluntary basis even in its introduction. Another, a food company, operated voluntarily for years and is only now launching its "mandatory" Circles on a scale that will involve thousands of additional employees.

This "tampering" with the voluntary feature tends to set off shock waves amongst the thousands of facilitators that have accepted it as one of the

Quality Circle commandments--one chiseled in stone! "After all," they argue, "the Japanese with their 24-year success record in Quality Circles insist it be voluntary!"

Well, I guess it's time for personal confession! Yours truly, as part of the well-publicized Lockheed QC Circles study team that spent several weeks in Japan during November 1973, helped to originate the voluntarism myth. Yes, that's what it was--a myth. Blame it on the language barrier or blame it on cultural barriers (I've suffered from both), it nevertheless was what we *thought* we were being told. Even more, the Japanese QC Circle literature often extolls the virtues of Circle voluntarism.

Japanese Voluntarism Explained

First, let us remember that the U.S. was a prime role model for the Japanese. Not only were they avid students of our Quality Control practices, but they were also careful observers of the theory and practice of small groups in America. Americans tend to give options to people. Tie that in with the fact that the first Japanese QC Circles were operated after working hours and totally without compensation, the Japanese had little choice but to make them voluntary. The Japanese had another concern. They expected resistance from their managers. Let us not forget that Quality Circles did not get off to a roaring success in Japan. There was virtually no support to start this activity. When the Union of Japanese Scientists and Engineers (JUSE) first asked its member companies to give it a try, none stepped forward. Some managers felt that workers would have no desire to participate. Others felt it would be a waste of time--that the hourly worker could not make a significant enough contribution to make it a success.

It wasn't until 1985, in a conversation I had with Dr. Ishikawa in Japan, that the current explanation of Japanese voluntarism was communicated to me. On the way over to Japan, I had read his latest book *What is Total Quality Control? The Japanese Way.* That was my first clue that I had helped perpetrate a myth. My subsequent conversations with Dr. Ishikawa confirmed it.

Here's how it works. The Japanese supervisor receives very strong encouragement from management to start a Quality Circle. When he or she decides to "volunteer" to start a Circle, *every member of the work group is part of the decision*! On the surface, that doesn't sound very voluntary. But, the supervisor does not simply commandeer everybody into the Circle. First, employees are told by the supervisor that he or she would like their ideas about forming a Quality Circle. It continues to be a subject for conversation until everyone agrees that it would be a good idea. That process might take minutes, days, weeks or months. Sooner or later, almost everybody decides that they want to do what their supervisor obviously wanted to do all along.

So, you can see that Japanese Quality Circles are not voluntary in the sense that Americans typically view the concept of voluntarism.

Legitimacy of "Mandatory" Circles

Most people can readily agree that mandatory Circles would have been unreasonable in Japan when members met after work, on their own time, and with no pay. But, the most recent survey conducted by the Quality Circle Institute indicates that approximately 93 percent of U.S. Circles meet *during* normal work hours.

Advocates of the mandatory Circle concept declare, "They are getting paid for their attendance at Circle meetings. Quality Circles are not an optional added feature of the job, they are *part* of it." Supporters will further point out that many aspects of the workplace are nonnegotiable such as: when to start work, length of lunch and coffee breaks, dress codes, rules and regulations, or who you are expected to work with.

There are several examples of nonvoluntary permanent and semi-permanent groups in the workplace. Examples include task teams, subcommittees, safety meetings, orientation meetings and, most familiar of all, staff meetings. Who ever heard of someone unilaterally deciding that he would not attend the staff meeting in his area?

Advocates are also perturbed that a few Circle members sense an element of power in the voluntary feature of Circle activities. And there *is* power. Most facilitators and leaders can relate stories of how members have used that power to influence the way things go within the Circle and even outside of it.

Prerequisites

The most essential prerequisite to nonvoluntary Circles is for management to determine if it makes sense to have all employees involved in Circle activities. If some kind of record keeping has been maintained and if management has been properly informed as to Circle accomplishments, this shouldn't be too difficult to establish. The most usual determinant is whether or not it is cost effective.

The spread of Quality Circles into other parts of the organization requires a great deal of planning, patience and superb timing. There will be a number of orientations and training sessions. The successful expansion will require a well-thought-out strategy plan. The participative work process way of life must be sold with a combination of patience and determination.

Above all, management directives to expand should be absolutely avoided unless employees are provided the time to do it, given the necessary training, and provided with the leadership to start the action. Goals and objectives must be part and parcel of Circle activity just as they are in any other part of the work situation. And, if management really wants to make Circles a part of the way they do business, employee job reviews will rate their Circle performance just as all other aspects of their job.

Conclusion

Even though the Japanese call their Quality Circle activities voluntary, there is evidence to indicate otherwise. Circle activities are part of the work process, no and's, no if's. The Japanese companies have recognized that their people can make a difference--provide a competitive edge. They want that competitive edge and Circle involvement becomes a subtle condition of employment. Americans have talked about employing the minds as well as the hands and feet of their employees. The difference is, the Japanese are doing it.

It is too soon to know if nonvoluntary Circles can be successful on a large scale. Preliminary evidence indicates they can be. I also think the Japanese version of "voluntarism" should not be dismissed too quickly. It works in Japan. I think it will work in the U.S. Americans can search their minds and quickly come up with personal examples that lend encouragement as to its workability in the U.S.

Biographical Information

Donald L. Dewar is recognized as one of the world's foremost authorities on Quality Circles and employee participation. He has spoken to thousands of people on this concept in hundreds of sessions worldwide. Don was a co-founder of the International Association of Quality Circles. He served as that organization's President for three terms before his honorary appointment as Director Emeritus. Mr. Dewar's books and training materials have sold millions of copies and have been translated into six different languages. In addition, he has authored more than 200 magazine and newspaper articles on the subject (including a feature article in the McGraw-Hill 1984 Yearbook of Science and Technology). Mr. Dewar will publish over 20 new audiovisual training modules during 1987. These have been in production since early 1986, and will cover SPC, TQC and Quality Circle subjects.